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DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY
GEORGE OTIS SMITH, DIRECTOR

WATER-SUPPLY PAPER 370

SURFACE WATER SUPPLY OF OREGON

1878-1910

BY

F. F. HENSHAW AND H. J. DEAN

Prepared in cooperation with
THE STATE OF OREGON
John H. Lewis, State Engineer



WASHINGTON
GOVERNMENT PRINTING OFFICE
1915



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SURFACE WATER SUPPLY OF OREGON.

By F. F. HENSHAW and H. J. DEAN.

INTRODUCTION.

The collection of hydrometric data was begun by the United States Geological Survey in 1888, when the United States Irrigation Survey was organized and a few gaging stations were established in various sections of the arid West. In 1890, stations were established in Oregon on Owyhee River at Owyhee and on Malheur River at Vale, and many discharge measurements were made.

The Irrigation Survey came to an end in July, 1891, through lack of appropriations, but records were obtained at several stations in various parts of the United States, including those on Owyhee and Malheur rivers part of the time until 1895, and the division of hydrography continued in existence as a part of the topographic branch of the Survey.

Since the fiscal year ending June 30, 1895, successive sundry civil bills passed by Congress have carried appropriations for "gaging the streams and determining the water supply of the United States * * * and for the preparation of reports upon the best methods of utilizing the water resources."

The only records of stream discharge obtained in Oregon between 1895 and 1903 were relating to Owyhee and Malheur rivers, 1895 to 1897; Umatilla River at Gibbon, where a station was established in 1896; and Deschutes River at Moro and Hood River at Tucker's bridge, 1897 to 1899. Between 1894 and 1902 discharge measurements were made either by engineers sent out from the Washington office of the Survey, or by Sydney Arnold, resident hydrographer for the State of Washington, who made occasional trips into Oregon.

The reclamation act was passed in 1902, and as a result the Reclamation Service was organized as a branch of the Geological Survey. In 1903 John T. Whistler was appointed district engineer for Oregon, in charge of both stream measurements and investigations under the provisions of the reclamation act.

Between 1903 and 1905 many gaging stations were established, chiefly in connection with investigations of possible irrigation projects. In 1905 the Oregon Legislature passed an act providing for an annual appropriation of \$2,500 for the investigation of the water

resources of the State, and a like amount for topographic mapping, contingent on the allotment of an equal amount by the Geological Survey. At the same time the office of State engineer was created and John H. Lewis, formerly of the Geological Survey, was appointed by Governor Chamberlain.

With the additional funds thus made available gaging stations were established on previously unmeasured streams rising in the Cascade Mountains. This new work was carried out under the direction of the State engineer, who was designated to represent the Geological Survey, as well as the State.

In the spring of 1906 J. C. Stevens was placed in charge of all hydrometric investigations in Oregon under the direction of D. C. Henry, supervising engineer. In July of that year the Reclamation Service was made a separate bureau and thereafter the work was carried on entirely by J. C. Stevens. In 1910 Mr. Stevens resigned and was succeeded by F. F. Henshaw.

In 1911 the Oregon Legislature appropriated \$20,000 annually for hydrographic and topographic work in cooperation with the United States Geological Survey, in addition to the \$5,000 annually previously appropriated, and of this \$7,000 has each year been spent for stream measurements. None of the results obtained from the expenditure of these additional funds appear in the present report.

In 1913 the State engineer and the Director of the United States Geological Survey entered into a contract by the terms of which there were to be contributed from the State survey fund, derived from a license tax on water powers, the sum of \$3,000, the Geological Survey to contribute as its share an equal sum for compiling and printing stream-flow data. In 1914 a similar contract was executed, covering \$3,000 derived from the license tax for the current year. In compliance with these agreements the present report has been prepared. The report embraces hydrometric data from 1878 to September 30, 1910. The results of measurements for the years ending September 30, 1911 and 1912, have been published in Water-Supply Papers 310, 311, 312, 330, 331, and 332. All the data here assembled have been carefully studied and the results have been recomputed when necessary to insure their best possible interpretation. For example, the daily discharge for a station may be computed the first year from a poorly defined rating curve; the next year, with additional measurements, a somewhat different curve may fit all the points better without indicating that any change in channel has occurred. The second curve is therefore more truly applicable to the gage readings of the first year than the one actually used, but in past reports covering only a given year no systematic effort has been made to revise the records of earlier years. No changes in previously published data, however, have been made unless apparently warranted by the accuracy of the field data.

COOPERATION.

Many records have been collected and furnished to the United States Geological Survey by other Government bureaus and by private corporations and individuals. Such cooperation is duly acknowledged in the description of the stations. Special acknowledgment is due to the United States Weather Bureau and the United States Engineer Corps, whose stations on Columbia River at The Dalles and Cascade Locks and on Willamette River at Albany have made available records considerably longer than any kept by the Geological Survey alone.

DIVISION OF WORK.

The data for this report were compiled in the Portland office of the water-resources branch of the United States Geological Survey by H. J. Dean. Rating-curve studies and comparisons of data were made by F. F. Henshaw, district engineer, and H. J. Dean. The computations were made by H. J. Dean, C. L. Batchelder, and P. V. Hodges. The report has been edited by Mrs. B. D. Wood.

DEFINITION OF TERMS.

The volume of water flowing in a stream—the “run-off” or “discharge”—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-foot, gallons per minute, miner’s inches, and discharge in second-foot per square mile, and (2) those that represent the actual quantity of water, as run-off in depth in inches, acre-feet, and millions of cubic feet. The principal terms used in this report are second-foot, second-foot per square mile, run-off in inches, and acre-feet. They may be defined as follows:

“Second-foot” is an abbreviation for “cubic feet per second.” A second-foot is the rate of discharge of water flowing in a channel of rectangular cross-section, 1 foot wide and 1 foot deep, at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the tables of convenient equivalents (pp. 4-6).

“Second-foot per square mile” is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

“Run-off, depth in inches,” is the depth to which the drainage area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in depth in inches.

An "acre-foot" is equivalent to 43,560 cubic feet and is the quantity required to cover an acre to the depth of 1 foot. The term is commonly used in connection with storage for irrigation work.

The following terms used in this report are not in very common use:

"Discharge relation" is an abbreviation for the term "relation of gage height to discharge."

"Control," "controlling section," and "point of control" are terms used to designate that section or sections of the stream below the gage which determine the discharge relation at the gage. It should be noted that the control may not be the same section or sections at all stages.

The "point of zero flow" for a given gaging station is that point on the gage—the gage height—to which the surface of the river would fall if there were no flow.

CONVENIENT EQUIVALENTS.

The following is a list of convenient equivalents for use in hydraulic computations:

Table for converting discharge in second-feet per square mile into run-off in depth in inches over the area.

Discharge (second-feet per square mile).	Run-off (depth in inches over the area).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.03719	1.041	1.079	1.116	1.153
2.....	.07438	2.083	2.157	2.231	2.306
3.....	.11157	3.124	3.236	3.347	3.459
4.....	.14876	4.165	4.314	4.463	4.612
5.....	.18595	5.207	5.393	5.579	5.764
6.....	.22314	6.248	6.471	6.694	6.917
7.....	.26033	7.289	7.550	7.810	8.070
8.....	.29752	8.331	8.628	8.926	9.223
9.....	.33471	9.372	9.707	10.041	10.376

NOTE.—For part of a month multiply the values for one day by the number of days.

Table for converting discharge in second-feet into run-off in acre-feet.

Discharge (second- feet).	Run-off (acre-feet.)				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	1.983	55.54	57.52	59.50	61.49
2.....	3.967	111.1	115.0	119.0	123.0
3.....	5.950	166.6	172.6	178.5	184.5
4.....	7.934	222.1	230.1	238.0	246.0
5.....	9.917	277.7	287.6	297.5	307.4
6.....	11.90	333.2	345.1	357.0	368.9
7.....	13.88	388.8	402.6	416.5	430.4
8.....	15.87	444.3	460.2	476.0	491.9
9.....	17.85	499.8	517.7	535.5	553.4

NOTE.—For part of a month multiply values for one day by the number of days.

Table for converting discharge in second-feet into run-off in millions of cubic feet.

Discharge (second- feet).	Run-off (millions of cubic feet).				
	1 day.	28 days.	29 days.	30 days.	31 days.
1.....	0.0864	2.419	2.506	2.592	2.678
2.....	.1728	4.838	5.012	5.184	5.356
3.....	.2592	7.257	7.518	7.776	8.034
4.....	.3456	9.676	10.024	10.368	10.712
5.....	.4320	12.095	12.530	12.960	13.390
6.....	.5184	14.514	15.036	15.552	16.068
7.....	.6048	16.933	17.542	18.144	18.746
8.....	.6912	19.352	20.048	20.736	21.424
9.....	.7776	21.771	22.554	23.328	24.102

NOTE.—For part of a month multiply values for one day by the number of days.

- 1 second-foot equals 40 California miner's inches (law of March 23, 1901).
- 1 second-foot equals 38.4 Colorado miner's inches.
- 1 second-foot equals 40 Arizona miner's inches.
- 1 second-foot equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.
- 1 second-foot for one year (365 days) covers 1 square mile 1.131 feet or 13.572 inches deep.
- 1 second-foot for one year (365 days) equals 31,536,000 cubic feet.
- 1 second-foot equals about 1 acre-inch per hour.
- 1 second-foot for one year (365 days) equals 724 acre-feet.
- 1 second-foot for one day covers 1 square mile 0.03719 inch deep.
- 1 second-foot for one day equals 86,400 cubic feet.
- 1,000,000,000 (1 United States billion) cubic feet equals 11,570 second-feet for one day.
- 1,000,000,000 cubic-feet equals 414 second-feet for one 28-day month.
- 1,000,000,000 cubic-feet equals 399 second-feet for one 29-day month.
- 1,000,000,000 cubic-feet equals 386 second-feet for one 30-day month.
- 1,000,000,000 cubic-feet equals 373 second-feet for one 31-day month.
- 100 California miner's inches equal 18.7 United States gallons per second.
- 100 California miner's inches for one day equal 4.96 acre-feet.
- 100 Colorado miner's inches equal 2.60 second-feet.
- 100 Colorado miner's inches equal 19.5 United States gallons per second.
- 100 Colorado miner's inches for one day equal 5.17 acre-feet.
- 100 United States gallons per minute equal 0.223 second-foot.
- 100 United States gallons per minute for one day equal 0.442 acre-foot.
- 1,000,000 United States gallons per day equal 1.55 second-foot.
- 1,000,000 United States gallons equal 3.07 acre-feet.
- 1,000,000 cubic feet equal 22.95 acre-feet.
- 1 acre-foot equals 325,850 gallons.
- 1 inch deep on 1 square mile equals 2,323,200 cubic feet.
- 1 inch deep on 1 square mile equals 0.0737 second-foot per year.
- 1 foot equals 0.3048 meter.
- 1 mile equals 1.60935 kilometers.
- 1 mile equals 5,280 feet.
- 1 acre equals 0.4047 hectare.
- 1 acre equals 43,560 square feet.
- 1 acre equals 209 feet square, nearly.
- 1 square mile equals 2.59 square kilometers.
- 1 cubic foot equals 0.0283 cubic meter.

- 1 cubic foot of water weighs 62.5 pounds.
 1 cubic meter per minute equals 0.5886 second-foot.
 1 horsepower equals 550 foot-pounds per second.
 1 horsepower equals 76.0 kilogram-meters per second.
 1 horsepower equals 746 watts.
 1 horsepower equals 1 second-foot falling 8.80 feet.
 1½ horsepower equal about 1 kilowatt.

To calculate water power quickly: $\frac{\text{Sec.-ft.} \times \text{fall in feet}}{11} = \text{net horsepower on water}$
 wheel realizing 80 per cent of theoretical power.

EXPLANATION OF DATA.

The data presented in this report, in general, are divided into the years beginning October 1 and ending September 30 of the following year. At the 1st of January in most parts of the country a large amount of the precipitation for the preceding three months is stored, either as ground water, in the form of snow, or in lakes. This stored water passes off in the streams during the spring break-up. At the end of September the only stored water available for run-off in the streams is possibly a small amount held in ground storage. Therefore the run-off for a year, beginning with October 1, is practically all derived from precipitation occurring within that year.

For each regular current-meter gaging station the following data are given: Description of the station, list of discharge measurements, table of daily gage height, table of daily discharge, table of monthly and yearly discharge and run-off.

In addition to statements regarding the location and installation of current-meter stations, the descriptions give information in regard to any conditions that may affect the constancy of the discharge relation, covering such points as ice, logging, shifting channels, and backwater; also information regarding diversions which decrease the total flow at the measuring section. Statements are also made regarding the accuracy of the data.

The table of daily gage height shows the daily fluctuations of the surface of the river as found from the mean of the gage readings taken each day, usually in the morning and in the evening, though at many stations only one reading is made each day. At a comparatively few stations automatic gages are used, some of which give a continuous record of river stage in the form of a hydrograph and others a record printed at regular intervals, from which the mean daily gage height can be computed. The gage height given in the table represents the elevation of the surface of the water above the zero of the gage. All gage heights affected by the presence of ice in the streams or by backwater from obstructions are published as recorded, with suitable footnotes. The rating table is not applicable for such periods unless the proper corrections to the gage heights are known and applied. Attention is called to the fact that the zero of the gage is placed at an arbitrary

datum and has no relation to zero flow or the bottom of the river. In general the zero is located somewhat below the lowest known surface elevation, to avoid negative readings.

The discharge measurements and gage heights are the base data from which rating tables, daily discharge tables, and monthly discharge tables are computed.

The rating table gives, either directly or by interpolation, the discharge in second-feet corresponding to every stage of the river recorded during the period for which it is applicable. It is not published in this report, but can be determined from the tables of daily gage height and daily discharge.

The table of daily discharge determined from the rating table gives the discharge in second-feet corresponding to the mean of the gage readings observed each day.

The base data for the tables of monthly discharge presented in this report, unless otherwise stated in description of station, have been collected by the methods commonly used at current-meter gaging stations and described in standard textbooks.

In the table of monthly discharge the column headed "Maximum" gives the mean flow, as determined from the rating table, for the day when the mean gage height was highest. As the gage height is the mean for the day, it does not indicate correctly the stage when the water surface was at crest height, and the corresponding discharge was consequently larger than given in the maximum column. Likewise, in the column of "Minimum" the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet for each second during the month. On this the computations for the remaining columns, which are defined on pages 3 and 4, are based.

ACCURACY OF FIELD DATA AND COMPUTED RESULTS.

The accuracy of stream-flow data depends (1) on permanence of the discharge relation, and (2) on the accuracy of observation of stage, measurements of discharge, and interpretation of data.

In order to give engineers and others information regarding the probable accuracy of the computed results, footnotes are added to the daily-discharge tables, stating the probable accuracy of the rating curves used, and an accuracy column is inserted in the monthly-discharge table. For the rating curves "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined," within 10 per cent; "poorly defined" or "approximate" within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The accuracy column in the monthly-discharge table does not apply to the estimate of maximum or minimum discharge nor to that for any one day, but to the monthly mean. It is based on the accuracy of the rating curve, the probable reliability of the observer, the number of gage readings per day, the range of the fluctuation in stage, and knowledge of local conditions. In this column, A indicates that the mean monthly flow is probably accurate within 5 per cent; B, within 10 per cent; C, within 15 per cent; D, within 25 per cent. Special conditions are covered by footnotes.

Even though the monthly means for any station may represent with a high degree of accuracy the quantity of water flowing past the gage, the figures showing discharge per square mile and depth of run-off in inches may be subject to gross errors which result from including in the measured drainage area large noncontributing districts or omitting estimates of water diverted for irrigation or other use. On this account the computations of "second-feet per square mile" and "run-off, depth in inches" have not been made for streams draining areas in which the annual rainfall is less than 20 inches, nor for those stations draining areas in which the precipitation exceeds 20 inches of rainfall if such computations might be uncertain or misleading because of the presence of large noncontributing districts in the measured drainage area, because of the omission of estimates of water diverted for irrigation or other use, or because of artificial control or unusual natural control of the flow of the river above the gaging station. For example, estimates of run-off per square mile are not given for streams east of the Cascades, practically all of which are affected by diversions, are spring fed, or drain areas wholly or partly arid, nor for the many spring-fed streams on the west side of the Cascades. The stations in Oregon for which estimates of run-off per square mile are given and the drainage area used in the computation are listed as follows:

	Square miles.
Columbia River at The Dalles.....	237,000
Sandy River below Salmon River near Bull Run.....	247
Bull Run River near Bull Run.....	102
Middle Fork of Willamette River at Jasper.....	1,450
Willamette River at Albany.....	4,860
Coast Fork of Willamette River near Goshen.....	690
McKenzie River near Springfield.....	960
North Fork of Santiam River at Mehama.....	740
Luckiamute River near Suver.....	233
South Fork of Yamhill River at Sheridan.....	290
Molalla River near Molalla.....	220
Clackamas River near Cazadero.....	685
Clackamas River near Barton.....	800
South Umpqua River near Brockway.....	1,800
North Umpqua River near Oakcreek.....	1,000
Siletz River at Siletz.....	220

All figures of "second-feet per square mile" and "run-off, depth in inches" previously published by the Survey should be used with extreme caution, and such figures in this report should be used with care because of possible inherent sources of error not known to the Survey.

In general the base data collected each year by the Survey engineers are published not only to comply with the law but also to afford any engineer the means of analyzing in detail the results of the computations. The table of monthly discharge is so arranged as to give only a general idea of the flow at the station and should not be used for other than preliminary estimates. The determinations of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind that the observations in each succeeding year may be expected to throw new light on data already collected and published.

NATURAL FEATURES OF OREGON.¹

TOPOGRAPHY.

A line of mountains—the Cascade Range—extending north and south across the State divides Oregon into a western humid region and an eastern arid region. The range merges into the Klamath Mountains on the south and extends northward, broken only by the narrow pass of Columbia River at Cascade Locks, across the State of Washington into British Columbia. Its general elevation in Oregon is less than 6,000 feet above sea level, though isolated peaks exceed 10,000 feet in altitude. Mount Hood, a volcanic peak near the northern extremity of the range in Oregon, is the highest mountain in the State and reaches an elevation of 11,225 feet.² The range is of volcanic origin, and its slopes, especially on the west, are deeply eroded. Numerous streams, many of them excellent for power development, rise on its western slopes and most of them join Willamette, Umpqua, or Rogue rivers. The eastern slopes give rise to few streams. Deschutes River, parallel to the range and discharging into the Columbia above Celilo, is the largest.

Between the Cascade Range and the Pacific Ocean is the Coast Range. This range was formed by uplift and distortion of the coastal plain and has been deeply dissected by erosion. It receives copious rainfall, and its valleys are traversed by many short but torrential streams.

South of the Coast and Cascade ranges and merging into them is the Siskiyou Ridge of the Klamath Mountains, which has also been deeply dissected by erosion. The most important valleys in this

¹ Chiefly from Van Winkle, Walton, Quality of the surface waters of Oregon; U. S. Geol. Survey Water-Supply Paper 363, pp. 10-13, 16, 1914.

² Map of Mount Hood quadrangle, U. S. Geol. Survey, 1913.

ridge are occupied by Rogue, Coquille, and Illinois rivers. In the northeastern part of the State are the Blue Mountains and the Wallowa Mountains, in which the general elevation is 8,000 feet and isolated peaks rise to greater height. The most important streams flowing from these mountains are Umatilla, Grande Ronde, Powder, and Silvies rivers. Many of the valleys are comparatively smooth, but because of the great dissection to which the mountains have been subjected the topography is commonly rough and broken.

The central and southern parts of the State consist of a high arid plateau over which are scattered many volcanic craters and which is so broken by cliffs and valleys that its appearance is in many places mountainous. Many of the valleys in this region contain large shallow lakes, some of which are permanent and others merely playas.

The topography of the region thus includes types ranging from the chaotically wild gorges of the Snake River basin to the level sagebrush plains of the Umatilla or the rolling prairies of Willamette Valley. Dense forests clothe the region west of the Cascades and are scattered over the better watered highlands of the interior, but the arid plains are generally treeless.

A large proportion of the total area of the State is covered by the vast lava flow which stretches from Mount Shasta north into British Columbia and from the Willamette Valley east to the upper reaches of Snake River. Its successive flows cover the country with a mantle of great thickness. It is overlain with a thick covering of volcanic ash which forms the soil over a large portion of the State. Over large areas in central Oregon this soil is pumiceous; it is so loose and porous that most of the moisture reaching it passes directly into the ground and finds its way into the underlying lava rock, going finally to feed the copious springs which issue from the rocks. This occurrence of pumice overlying lava is the chief cause of the remarkable steadiness of flow of Deschutes and Klamath rivers and their tributaries.

CLIMATE.¹

Mean temperature in Oregon differs with elevation and with distance inland. In Columbia River valley and west of the Cascades at points below 2,000 feet above sea level it is approximately 52° F.; east of the Cascade Range and south of the Columbia it ranges from 43° to 51°. A universal characteristic is the uniformly low temperature of the summer nights. In the coastal strip the greatest annual range in temperature is from 10° to 97°, with an average of 217 days between frosts. In the valley strip between the Coast and Cascade ranges the range is greater; maximum recorded temperatures for Portland and Ashland have been 102° and 108° F., respec-

¹ Abstracted from *Climatology of the United States*; U. S. Dept. Agr. Weather Bur. Bull. Q, pp. 948-969, 1906.

tively; minimum temperatures for those places have been -2° and -4° F. The average time between last and first frosts ranges from 213 days at Portland to 179 days at Ashland. In the higher sections of this district the extremes of temperature both daily and yearly are more marked, and at Lakeview, elevation 5,060 feet above sea level, frosts have occurred every month in the year. The higher elevations of the Cascades and the Blue Mountains are subject to lower temperatures than those mentioned.

Rainfall ranges from less than 8 inches in the southeastern part of the State to more than 138 inches in the northwestern coastal strip, and averages from 75 to 138 inches along the coast, from 20 to 45 inches in the valley region west of the Cascade Range, from 50 to 100 inches in the Cascades, from 8 to 22 inches on the central high plateau, from 10 to 15 inches in the Columbia Valley east of the Cascades, and from 12 to 25 inches in the foothills and valleys of the Blue Mountains. Maximum precipitation occurs in winter, and summers are dry. East of the Cascades there is a secondary maximum precipitation in May and June.

HYDROGRAPHY.

RIVERS.

The principal rivers of Oregon discharge into the Pacific, either indirectly through the Columbia, as do Malheur, Owyhee, Powder, Grande Ronde, Umatilla, John Day, Deschutes, and Willamette rivers, or directly, as do Siletz, Umpqua, Coquille, Rogue, and Klamath rivers. (See Pl. I.)

Most of the streams of central, south-central, and southeastern Oregon, however, discharge into the land-locked lakes of the Great Basin. Few of the rivers of this region are perennial, and the large shallow lakes that occupy the chief depressions are permanent only when evaporation is balanced or exceeded by inflow. Where surface flow is deficient intermittent lakes or playas are formed. The chief streams of the Great Basin region are Chewaucan, Ana, Donner und Blitzen, and Silvies rivers; the important lakes are Warner, Harney, Malheur, Abert, Summer, and Silver lakes.

Goose Lake, in south-central Oregon and northern California, occupies a valley in all essential respects similar to the valleys of the Great Basin lakes, and has at present no surface outlet, but as it has, within historic times, overflowed southward into Pit River, a tributary of the Sacramento, it is considered part of the San Francisco Bay drainage basin.

LAKES.

About 1.13 per cent of the surface of Oregon is occupied by lakes, most of which are situated in the Great Basin region or in the Cascade Mountains.

The larger lakes, except Crater Lake, are situated in the central Oregon plateau region, and are subject to wide fluctuations in area. Many of them, such as the Warner Lakes and Goose Lake, are slowly diminishing as a result of deficient inflow; several, among them Malheur, Harney, Silver (Harney County), Goose, and the Warner Lakes, will eventually disappear, owing to the use of the tributary waters for irrigation.

SWAMPS.

The marshes that in places border Columbia and Willamette rivers are unimportant, but the long flat valleys of the Great Basin contain rich, fertile, swamp lands, susceptible of great development when drained. Much of Harney Valley may be classed as reclaimable swamp land, Blitzen Valley alone containing nearly 100,000 acres of marsh, most of which is now being drained. Chewaucan Marsh, below Paisley, contains more than 25,000 acres of land that has been drained and utilized for wild hay. Other important swamps are the Klamath marshes and the overflow lands of Warner Valley. Reclamation of these lands is either now under way or is contemplated.

FLOODS.

The rivers reach a high stage during winter, most often in January, and some rivers reach a second flood stage late in spring or early in summer. The winter flood is the normal result of increased precipitation in winter; the summer floods are caused by the melting of snow on the mountain slopes. Columbia River is exceptional in that its period of maximum discharge is in June, its winter discharge being relatively slight. The floods of the larger rivers are at times serious. A rise of more than 30 feet above low water has been recorded on the Willamette, and the Columbia sometimes reaches 60 feet above extreme low stage.

COLUMBIA RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Columbia River has its source in Columbia Lake, in the eastern division of the Kootenai district, in British Columbia, flows northwest to the fifty-second parallel of latitude, turns abruptly southward, nearly paralleling its former course, passes through a series of narrow lakes, and crosses the international boundary line near the northeast corner of the State of Washington, where it receives Clark Fork. After traversing Washington in a general southerly direction, it turns westward and forms the boundary lines between Washington and Oregon; it discharges into Pacific Ocean at the forty-sixth parallel of latitude.

The total drainage area of the Columbia is estimated from the best available maps to be 259,000 square miles, divided as follows:

	Square miles.
Oregon.....	55,370
Washington.....	48,000
Idaho.....	81,380
Montana.....	25,000
Nevada.....	5,280
Wyoming.....	5,270
British Columbia.....	38,700

This area is limited on the east by the Rocky Mountains and is traversed north and south by the Cascade and Coast ranges. Between the mountain ranges are rolling, rough, and mountainous tablelands. Mean altitudes range from sea level near the mouth of the river, to 8,000 feet in the Rocky Mountains, 5,000 feet in the Cascade Range, and 1,000 to 4,000 feet in the intervening tablelands. Many peaks in the mountain ranges extend into the region of eternal snow, the highest in the Cascade Range, including Mount Baker (10,827 feet), Mount Rainier (14,408 feet), Mount Adams (12,307 feet), Mount Hood (11,225 feet), and Mount Jefferson (10,200 feet).

The principal tributaries of the Columbia River from source to mouth are listed in the following table:

Principal tributaries of the Columbia River.

From the west and north.	From the east and south.
Kettle River.	Kootenai.
San Poil.	Clark Fork.
Okanogan.	Colville River.
Methow.	Spokane River.
Chelan.	Snake.
Entiat.	Walla Walla.
Wenatchee.	Umatilla.
Yakima.	John Day River.
Klickitat.	Deschutes.
White Salmon.	Hood.
Lewis.	Sandy.
Kalama.	Willamette.
Cowlitz.	

The river is navigable in long stretches throughout its course in the United States, but owing to rapids and falls continuous navigation is not possible in the natural condition of the river. The navigable waters of the Columbia and its tributaries aggregate a total of 2,145 miles, distributed as follows:

*Navigable waters of Columbia River and tributaries.*¹

	Miles.
From the ocean to mouth of Willamette River.....	102
Mouth of Willamette to The Dalles, 88 miles; to Big Eddy.....	92
Big Eddy to Priest Rapids.....	207
Foot of Priest Rapids to head of rapids, obstructed, 11½ miles.....	
*Head of Priest Rapids to Wenatchee.....	57
Wenatchee to mouth of Okanogan River.....	68
Mouth of Okanogan to Spokane Rapids, navigable at great risk only, 109 miles.....	
*Spokane Rapids to Rickeys landing.....	56
Rickeys landing to Marcus, Wash., not navigable, 11 miles.....	
Marcus to Robson, B. C.....	63
Robson to Arrowhead Landing, B. C.....	124
Total navigable waters, main stream.....	769
SNAKE RIVER.	
*Mouth to Riparia.....	67
Riparia to Lewiston.....	73
*Lewiston to Grande Ronde River.....	25
Grande River to Ballards landing, obstructed, 175 miles.....	
*Ballards landing to Huntington.....	75
Total navigable waters, Snake River.....	240
WILLAMETTE RIVER AND TRIBUTARIES.	
Willamette River, mouth to Corvallis.....	118
*Willamette River, Corvallis to Eugene.....	53
*Tualatin River, mouth to head of navigation.....	25
Yamhill River, mouth to McMinnville.....	18
*Long Tom River, mouth to head of navigation.....	10
Total navigable waters, Willamette and tributaries.....	224
OTHER TRIBUTARIES OF COLUMBIA RIVER.	
Clatskanie River, navigable on tide above mouth.....	3
Lewis River, mouth to La Center.....	7
Cowlitz River, mouth to point 10 miles above Toledo.....	40
Lake Chelan, Lakeside, at foot of lake, to Stehekin.....	50
Clark Fork and Lake Pend Oreille, Lakeview to Box Canyon.....	116
Box Canyon to Metaline, navigable at high water at great risk only, 6 miles.....	
Cœur d'Alene Lake, Cœur d'Alene City to head of lake.....	24
Cœur d'Alene River, mouth to Mission Landing.....	32
Upper and Lower Kootenai rivers, Golder, B. C., to Jennings, Mont. .	259
Jennings to Bonners Ferry, not navigable, 75 miles.....	
Bonners Ferry to head of Kootenai Lake.....	239
Nelson to mouth at Robson, 25 miles, not navigable.....	
*Okanogan River, mouth to international boundary.....	87
International Boundary to Penticton, 37 miles, not navigable..	
Penticton to Okanogan Landing.....	55
Total navigable waters, other tributaries.....	912

¹ Parts of the Columbia and its tributaries marked with asterisk are navigable under favorable conditions. Practically all these stretches of river can be made navigable at all seasons of the year at comparatively small expense. Columbia and Snake rivers were formerly navigated throughout the year, except during occasional blockades from ice, from Celilo to Lewiston. It will be noted that part of Snake River, from mouth to Riparia, is now marked "navigable under favorable conditions."

The improvement of this river system for navigation is being carried on as rapidly as funds will permit. The work at present under way consists, briefly, of the deepening of the mouth of the Columbia River through the construction of jetties. In 1907 the Columbia bar had a navigable depth of approximately 26 feet at low tide; it is expected that when projects now under way are completed a depth of 40 feet may, if necessary, be obtained. The opening of the Cascade locks and canals to traffic in 1896 rendered the river navigable in one unit from the mouth to Big Eddy. With the completion in 1915 of the locks and canal around the obstructions between Celilo and Big Eddy, a distance of about $8\frac{1}{2}$ miles, the Columbia is now open to steamboat navigation from Priest Rapids to the sea—a distance of 400 miles.

The area drained by the Columbia includes perhaps the largest consolidated area of forests in the world. Originally almost the entire area, except those arid portions midway between the mountain ranges, was covered with dense forests, and although the territory has been settled for about sixty-five years and large areas have been cleared, the proportion of forested area to the entire area has been reduced but slightly. It is believed that at least 45 per cent (about 116,000 square miles) of the drainage area of Columbia River is forested, and that about 58,000 square miles contain merchantable timber.

The rainfall is distributed over the area most irregularly. From the Pacific coast eastward to the summit of the Coast Range the mean annual rainfall varies from 100 to 150 inches. In the basins between the Coast and Cascade ranges, it drops to about 40 inches per annum. It increases again to over 100 inches on the summit of the Cascade Range, and decreases very rapidly beyond the summit, until at the eastern base of the Cascades it has dropped to about 14 inches. At the mouth of Snake River the mean annual rainfall is about 9 inches, but this extremely low rainfall obtains only in the lower altitudes. Beyond this point the rainfall again increases in Washington and northern Idaho to about 20 inches, whereas in eastern Oregon it continues at about 9 inches or less. In the eastern areas a large proportion of precipitation appears as snow, and during the winter months the streams are more or less icebound. West of the Cascade Range, however, the winter stream flow is not affected by ice.

The climate of the area exhibits all the variations from the rigorous climate of the northern latitudes, as found in British Columbia and the higher table-lands of Oregon and Idaho, to the mild climate of western Oregon and Washington.

As regards irrigation, the area ranges from the extremely arid region, where irrigation is absolutely essential, through the semi-arid country, where dry farming and irrigation are practiced side by side, to the humid country that, strictly speaking, is arid in the summer months.

In the Willamette Valley, for instance, where the mean annual rainfall is approximately 40 inches, only 5 per cent of this amount is received during the growing season, and the fullest agricultural development will not be realized until this entire portion of the area is brought under irrigation as completely as are the arid portions beyond the mountains. The irrigated areas of the Pacific Northwest are being extended so rapidly that it is almost impossible to keep pace with the development, and yet, comparatively speaking, a very small portion of the irrigable area has been developed. At present 1,500,000 acres of land are under irrigation in the Northwest, and this area will be more than doubled when projects now being constructed are completed. The values of irrigated agricultural lands vary from about \$30 per acre for the poorest qualities of hay lands to \$3,000 per acre for the intensely cultivated orchards.

Columbia River and its tributaries afford at least one-third of the available water powers in the entire United States, but developments along this line have scarcely begun. About 250,000 horsepower are at present developed by water power in Oregon, Washington, and Idaho.

Lumbering has been the principal industry of the Northwest, and the streams of the country have therefore been used not only for water-power development but for the transportation of logs from the timbered mountain slopes to the mills and factories in the valleys below. Comparatively few streams, however, carry sufficient water during the summer months, and it has been necessary to build temporary dams on a large number of streams, where the logs are stored until released by opening the gates in the dam. The "splash" thus caused usually suffices to carry the logs to their destination.

The highest recorded flood in the Columbia River occurred in June, 1894. The highest floods on the tributaries of this river are invariably caused by "chinook"—a warm wind, usually accompanied by rain, occurring in the spring and fall. The fall "chinook" usually brings the highest waters, since it may occur immediately after a heavy snow has covered the mountain ranges. The Columbia itself is not greatly affected at such times.

COLUMBIA RIVER AT THE DALLES, OREG.

Location.—In sec. 34, T. 2 N., R. 13 E., at the dock of The Dalles, Portland & Astoria Navigation Co., 2,000 feet below the ferry at The Dalles, about 18 miles below Deschutes River and above Hood and Klickitat rivers.

Records presented.—June 1, 1878, to September 30, 1910; maximum stages, 1858 to 1877.¹

Drainage area.—237,000 square miles.

Gage.—Vertical staff in several sections, attached to piling; datum 46.36² feet above sea level; known as the Brooks gage; maintained by the United States Weather

¹ Discharge estimates 1879 to 1910 have been recomputed and estimates published in this report supersede those published in Water-Supply Papers 252, 272, and 292 of the United States Geological Survey.

² As referred to the primary level net of 1912.

Bureau; read since February 1, 1892. Readings on other gages used are as follows: High-water periods, 1858 to 1877, gage of Oregon Steam Navigation Co. at Lower Cascades Landing; June 1 to December 6, 1878, gage of the United States Engineer Corps at Umatilla; December 12, 1878, to September 30, 1910, for periods when the Brooks gage was not read, gage of the United States Engineer Corps above the Cascades; October 10, 1879, to June 30, 1881, gage of the United States Engineer Corps at The Dalles.

The Brooks gage has been washed out and replaced several times. It was probably checked occasionally by the United States Engineer Corps, but records of checking are not available. It was found to be correct in August, 1914. The United States Engineer Corps gage at The Dalles has been set at a number of arbitrary datums, all of which were carefully recorded; for this report readings were all reduced to the datum of the Brooks gage.

Channel.—Wide and deep; volcanic rock covered with sand and silt; control is rock reef at the Cascades; practically permanent.

Discharge measurements.—Made as follows: In 1903, with floats and with current meter at Cayuse Rock, 7 miles below The Dalles; in 1907, with a current meter from a boat at The Dalles; in 1908, with floats at The Dalles; in 1910 and 1913, from the Northern Pacific Railway bridge just above the mouth of Snake River, the discharges of Snake, Umatilla, John Day, and Deschutes rivers at their mouths being determined from gage readings and added to the measured discharge to give the flow at The Dalles. In determining the mean gage height for these measurements an allowance of one day was made for the time interval between the mouth of Snake River and The Dalles.

Rating curves.—Discharge estimates published in previous reports obtained by means of a rating curve based partly on two float measurements made in 1908, a coefficient of 1.05 having been used to reduce surface velocity to mean velocity. Later studies of vertical velocity curves of the Columbia indicate that a coefficient of 0.92 is more nearly correct. Rating curve adopted for revised computations passes through the two flood measurements made in 1913, close to the two float measurements made in 1908, as recomputed, and through the meter measurements made in 1907, 1910, and 1913. It averages the nine meter measurements made in 1903 and is about 5 per cent larger than the average of the float measurements of that year. Measurements made 1903 not studied by the Geological Survey, but the meter measurements are considered the more accurate. Rating curves for the gages at Cascade Locks and Umatilla have been derived from The Dalles curve by comparison of gage-height records, monthly mean gage heights for two stations being plotted as coordinates and a relation curve similar to a rating curve being drawn. Comparative plots of monthly mean gage heights were made as follows: Cascade Locks with Umatilla, Cascade Locks with Celilo, Cascade Locks with The Dalles, and The Dalles with Umatilla. These comparisons indicate a change in the control for the gage at Cascade Locks which occurred approximately June 1, 1884. The only available explanation of this change is contained in the annual report of Chief of Engineers, 1884, page 2246, referring to the Columbia at Cascade Locks. A large amount of blasting and excavating was done to improve the channel and obtain construction material, and this probably caused the change in control. Rating curve for flood gage heights at Lower Cascades Landing derived from that for Cascade Locks for 1879 to 1884 by means of a curve of relation for the same period. As high-water discharges of 1862 and 1876 are checked quite closely by high-water marks at The Dalles and Cascade Locks, estimates of volume of floods in the earlier years are probably not materially in error.

Extreme stages.—The highest flood of which there is authentic record, that of June, 1894, was caused by the coincidence of floods in upper Columbia River and in Snake River, accompanied by heavy rainfall in the lower drainage area. The snowfall all over the Columbia River drainage basin had been exceptionally heavy during the previous winter. The highest stage at Cascade Locks was 49.7 feet at 4 p. m., June 6, corresponding to a discharge of 1,160,000 second-feet, or 4.89 second-feet per square mile. The flood of 1849 may have closely approached this flood in peak discharge, but there is no authentic record of flood stage for that year. The lowest stage of which there is authentic record occurred in January, 1890, which also gives the lowest monthly mean on record. It was caused by a period of extremely cold weather following the driest year on record. The gage above the Cascades could not be read on account of ice from January 3 to 16, 1890. A reading was made on the gage below the locks January 7 and the discharge was determined from a relation of gage readings to be 41,900 second-feet. Any sudden drop in temperature when the river is low seems to cause a marked dropping off in discharge. It is probable that all the extreme low stages have been caused in this way. In the annual report of the Chief of Engineers, United States Army, for 1879 it is stated that the low water of the previous winter, 0.5 foot on January 18, 1879, which was the lowest for the preceding 10 years, was 2 to 3 feet higher than the low water of 1859 and 1862. This would seem to indicate that in the earliest years of settlement of the country there were periods during which the stage was as low as the lowest recorded stages, but probably no lower.

Accuracy.—Results presented in this report considered fair for 1878 to 1884 and excellent for later periods. The area tributary to Columbia River between The Dalles and the Cascades is only about 1 per cent of the area above The Dalles, and the discharge from this intermediate area is not much more than 3 per cent of the total discharge. Variations in this intermediate inflow probably cause little inaccuracy in the results of studies of relations of gage heights.

Cooperation.—Gage readings have been furnished by the United States Engineer Corps and by the United States Weather Bureau. Special acknowledgment is due to V. W. Tompkins, who has read the gage above the Cascades since 1891, and to S. L. Brooks, who read the Brooks gage from 1892 until quite recently. Mr. Brooks's earlier readings were made on his own initiative before he made any reports to the United States Weather Bureau. Discharge measurements of 1903 were furnished by the United States Engineer Corps. The cost of the flood measurements of 1913 and of the recomputation of discharge has been paid by the United States Reclamation Service and from the appropriation made by the State of Oregon for the investigation of water-power possibilities at The Dalles.

Discharge measurements of Columbia River at The Dalles, Oreg., in 1903-1908.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.				1903.			
Jan. 20 ^a	United States Engineer Corps.....	2.90	80,700	Feb. 14	United States Engineer Corps.....	2.80	85,500
22	.....do.....	3.50	86,900	16 ^a	.....do.....	2.10	74,500
27	.....do.....	9.70	168,000	17	.....do.....	1.80	76,200
28	.....do.....	10.70	174,000	18 ^a	.....do.....	1.80	71,100
30 ^a	.....do.....	9.00	142,000	19	.....do.....	1.60	76,400
31 ^a	.....do.....	7.70	128,000	20 ^a	.....do.....	1.40	72,100
Feb. 2 ^a	.....do.....	6.00	109,000	20	.....do.....	1.40	77,300
3 ^a	.....do.....	5.30	104,000				
5 ^a	.....do.....	4.30	95,300	1907.			
6 ^a	.....do.....	3.70	89,700	Oct. 31	J. C. Stevens.....	3.72	95,400
11	.....do.....	3.50	88,700	1908.			
12 ^a	.....do.....	3.30	85,100	June 20 ^a	H. D. McGlashan.....	36.20	630,000
13	.....do.....	3.10	83,500	July 9 ^a	McGlashan and Allen.	27.40	444,000

^a Measurement made by floats.

Maximum gage height, in feet, of Columbia River at Lower Cascades Landing, and discharge, in second-feet, at The Dalles, for 1858 to 1877.

[Gage heights observed by Oregon Steam Navigation Co.]

Year.	Gage height.	Discharge.	Year.	Gage height.	Discharge.
1858.....	84.3	563,000	1868.....	81.8	483,000
1859.....	93.6	874,000	1869.....	76.6	328,000
1860.....	87.5	668,000	1870.....	90.8	777,000
1861.....	86.0	618,000	1871.....	93.1	856,000
1862 ^a	95.7	948,000	1872.....	89.6	737,000
1863.....	90.8	777,000	1873.....	86.6	638,000
1864.....	87.1	654,000	1874.....	84.9	582,000
1865.....	88.9	714,000	1875.....	88.0	684,000
1866.....	92.6	839,000	1876 ^b	96.0	958,000
1867.....	87.6	671,000	1877.....	81.9	480,000

^a High-water mark at The Dalles for 1862 was 48.9 feet, discharge 923,000 second-feet.

^b High-water mark at The Dalles for 1876, 52.3 feet, discharge 1,000,000 second-feet; at Cascade Locks 43.4 feet; discharge 948,000 second-feet.

Daily gage height, in feet, of Columbia River at Umatilla, Oreg., for 1878.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....		10.9	9.5	15.1	15.0	9.9	6.8	3.2	2.2	2.7
2.....		10.7	9.2	15.0	14.7	9.8	6.7	3.2	2.2	2.7
3.....		10.5	9.1	15.2	14.2	9.8	6.7	3.2	2.1	2.6
4.....		10.6	8.9	15.3	13.8	9.6	6.7	3.3	2.0	3.2
5.....		11.0	8.8	15.5	13.6	9.5	6.7	3.2	2.0	3.5
6.....		11.6	8.8	15.7	13.4	9.2	6.6	3.1	2.0	3.8
7.....		12.3	9.1	16.2	13.1	9.1	6.5	3.0	1.9	.....
8.....		12.7	8.2	16.8	13.0	9.0	6.4	2.8	1.9	.....
9.....		12.8	9.2	17.2	12.8	8.9	6.3	2.8	1.8	.....
10.....		12.6	9.6	17.6	12.5	8.8	6.2	2.8	1.8	.....
11.....		12.2	10.2	17.9	12.3	8.8	6.2	2.8	1.8	.....
12.....		11.7	11.0	18.0	12.2	8.6	6.0	2.8	1.7	.....
13.....		11.3	12.2	17.9	12.0	8.4	5.8	2.8	1.7	.....
14.....		11.0	13.1	17.8	11.9	8.2	5.7	2.8	1.6	.....
15.....		10.7	13.2	17.8	11.8	8.2	5.5	3.2	1.5	.....
16.....		10.3	13.5	17.5	11.7	8.0	5.3	3.1	1.5	.....
17.....		10.0	13.4	17.2	11.6	7.8	5.2	2.8	1.4	.....
18.....		9.8	13.5	17.1	11.5	7.7	5.0	2.7	1.4	.....
19.....		9.4	13.2	17.0	11.4	7.7	4.8	2.6	2.6	.....
20.....		9.2	13.2	16.9	11.2	7.8	4.5	2.5	2.6	.....
21.....		9.0	13.3	16.8	11.2	7.7	4.2	2.6	2.5	.....
22.....		8.8	13.8	16.6	10.8	7.7	4.0	2.7	2.8	.....
23.....		8.9	13.8	16.5	10.6	7.5	3.8	2.8	3.0	.....
24.....	8.6	8.0	14.2	16.2	10.3	7.5	3.7	3.8	3.2	.....
25.....	9.2	9.0	14.8	16.2	10.2	7.6	4.5	3.5	3.2	.....
26.....	10.0	9.1	15.0	16.0	10.0	7.6	3.4	3.0	3.2	.....
27.....	11.0	9.2	15.2	15.6	9.9	7.5	3.4	2.8	3.0	.....
28.....	11.5	9.2	15.5	15.4	9.9	7.4	3.3	2.6	2.8	.....
29.....	11.6	9.2	15.5	15.1	9.9	7.3	3.2	2.4	2.8	.....
30.....	11.5	9.2	15.2	15.1	9.8	7.2	3.2	2.3	2.7	.....
31.....	11.2		15.2		9.9	7.0		2.2		.....

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1878-79.												
1.				1.6	1.0	10.5	17.2	17.8	27.7	29.8	20.2	11.2
2.				1.5	.7	12.7	17.8	17.8	27.7	29.8	19.9	11.0
3.				1.4	.9	11.7	19.0	18.2	27.7	29.5	19.2	10.7
4.				1.2	.7	10.3	19.8	19.2	28.1	29.0	18.7	10.5
5.				1.1	.3	9.5	20.3	19.2	28.9	28.6	18.3	10.2
6.				.9	.4	8.3	20.8	19.2	30.0	28.3	18.0	10.0
7.				.8	.8	7.8	21.3	19.1	30.4	28.2	17.8	9.8
8.				.6	.8	7.3	22.2	18.9	30.5	27.7	17.4	9.3
9.				.5	.8	7.3	22.9	18.7	30.7	27.2	16.9	9.2
10.				.8	.9	7.4	23.3	18.7	30.5	27.0	16.5	9.0
11.				1.0	1.1	7.3	22.8	18.8	29.8	26.9	16.1	8.7
12.				1.2	.5	7.6	21.8	18.6	29.3	26.7	15.7	8.4
13.			5.5	1.4	1.2	7.2	21.0	18.4	28.8	26.5	15.3	8.2
14.			4.7	1.5	.9	7.3	20.1	18.3	29.4	26.3	15.0	8.0
15.			4.3	1.2	1.2	7.6	19.5	18.4	29.8	26.1	14.7	7.9
16.			3.8	1.0	1.4	8.2	19.4	18.8	30.5	26.0	14.5	7.9
17.			3.5	.8	1.7	8.4	19.3	19.8	31.0	25.5	14.4	7.8
18.			3.3	.5	1.8	8.3	18.7	20.7	31.2	25.2	14.2	7.6
19.			3.3	.6	1.9	8.2	18.5	21.1	31.1	24.8	13.8	7.4
20.			3.3	.7	2.3	8.2	17.7	21.2	30.7	24.3	13.8	7.1
21.			3.0	.8	3.7	8.2	17.4	21.4	30.7	23.9	13.6	7.0
22.			2.7	.9	3.5	8.1	17.4	21.5	30.5	23.3	13.4	6.9
23.			2.6	1.0	3.7	8.3	17.6	21.8	30.5	23.0	13.1	6.6
24.			2.5	1.1	7.8	8.4	17.5	22.1	30.7	22.5	13.0	6.5
25.			2.4	1.1	6.9	9.7	17.4	23.2	31.0	22.2	12.8	6.4
26.			2.3	1.2	7.2	10.5	17.2	23.7	30.7	21.8	12.4	6.5
27.			2.2	1.3	12.0	12.2	17.5	25.0	30.5	21.4	12.3	6.3
28.			2.0	1.3	11.3	14.4	18.0	25.5	30.0	21.2	12.1	6.1
29.			1.9	1.4	11.2	17.2	18.1	26.0	29.8	20.8	12.0	6.0
30.			1.7	1.4	11.2	17.2	18.1	26.8	29.6	20.6	11.7	5.8
31.			1.6	1.0	11.2	17.4	17.4	27.7	29.6	20.3	11.5	5.7
1879-80.												
1.	5.8	3.7	2.2	2.8	3.8	1.5	4.1	13.8	28.1	41.7	30.1	13.7
2.	6.2	3.7	2.7	2.8	3.6	2.0	3.7	15.7	28.3	41.8	29.1	13.3
3.	6.1	3.5	2.9	3.1	3.2	1.6	3.4	17.7	28.1	41.9	28.4	13.0
4.	6.0	3.4	3.0	3.0	2.9	1.7	3.3	19.9	28.5	41.5	27.6	12.9
5.	6.2	3.4	3.7	3.5	2.8	1.2	3.4	21.8	29.5	40.9	26.9	12.8
6.	6.1	3.2	4.1	2.9	1.8	3.5	22.3	30.2	40.5	26.1	12.5	12.5
7.	5.9	3.4	4.7	2.8	1.4	3.9	22.8	30.2	40.5	25.3	12.1	12.1
8.	5.8	3.3	4.0	5.0	2.4	1.7	4.2	22.3	29.9	40.6	24.3	11.9
9.	5.7	3.4	3.7	4.7	2.1	1.5	4.4	21.2	30.2	40.8	23.7	11.7
10.	5.6	3.6	3.5	4.5	2.3	1.4	4.8	20.3	31.1	40.3	23.0	11.5
11.	5.5	3.7	3.2	3.7	2.3	2.1	5.8	19.4	31.3	39.7	22.4	11.5
12.	5.4	3.5	3.0	3.3	2.4	1.8	7.5	18.5	31.1	39.2	21.8	11.1
13.	5.3	3.5	3.0	2.8	2.3	1.7	9.1	18.2	30.9	38.4	21.0	11.0
14.	5.3	3.4	2.9	2.9	2.4	1.7	10.6	18.5	30.8	37.6	20.5	10.8
15.	5.2	3.4	3.4	3.9	2.3	1.7	10.9	18.9	31.6	36.4	19.8	10.6
16.	5.2	3.4	3.7	4.2	2.3	1.5	10.9	19.2	32.8	35.6	19.3	10.4
17.	5.1	3.4	3.8	4.6	2.2	1.4	10.4	19.5	33.8	35.1	18.6	10.2
18.	5.1	3.3	4.2	4.9	2.0	1.3	9.9	19.8	34.3	35.1	18.0	9.9
19.	4.8	3.2	4.5	5.0	2.1	1.3	9.3	20.3	34.9	35.4	17.7	9.6
20.	4.7	3.1	4.1	5.0	1.9	1.1	8.6	21.0	35.7	35.7	17.2	9.4
21.	4.6	3.0	5.4	5.4	1.7	1.1	8.2	22.2	36.8	35.8	16.8	9.3
22.	4.4	2.8	5.2	5.2	1.7	1.3	8.0	23.6	36.7	35.5	16.4	9.0
23.	4.4	2.5	5.3	5.3	1.5	1.4	7.8	24.9	36.0	35.0	16.3	8.8
24.	4.3	2.4	5.2	5.2	1.3	1.6	8.5	25.9	35.5	34.6	16.0	8.6
25.	4.4	2.1	5.6	5.6	1.2	1.7	9.5	26.5	35.8	34.4	15.7	8.5
26.	4.3	2.3	5.4	5.4	1.9	2.4	10.0	26.2	37.3	34.2	15.3	8.2
27.	4.2	2.2	5.0	5.0	2.1	2.8	10.6	25.4	39.1	33.9	15.1	8.1
28.	4.0	2.2	4.9	4.9	1.6	3.4	11.1	24.9	40.7	33.4	14.8	8.0
29.	4.2	2.2	4.7	4.7	1.7	3.9	11.3	24.9	41.5	32.7	14.7	7.8
30.	4.0	2.1	4.3	4.3	1.7	4.1	12.6	25.9	41.7	31.8	14.3	7.6
31.			4.2	4.2	1.7	4.2		27.4		31.1	14.1	7.5

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1880-81.												
1.....		5.9	2.6	4.1	2.8	15.6	14.6	23.4	22.9	27.6	17.1	9.7
2.....	7.3	5.8	2.6	3.8	6.3	17.2	16.1	23.0	22.9	27.4	16.8	9.5
3.....		5.7	2.3	3.5	12.0	18.3	18.5	22.5	23.4	27.0	16.6	9.2
4.....		5.5	2.3	3.4	14.0	17.3	20.1	22.1	24.4	27.1	16.5	9.0
5.....		5.2	1.5	3.8	18.9	16.1	21.1	21.9	26.1	26.7	16.4	8.8
6.....	6.6	5.2	1.5	3.9	20.8		21.6	22.2	28.4	26.4	16.2	8.7
7.....	6.5		1.5	3.7	20.6	14.2	21.9	23.0	29.3	26.2	15.8	8.3
8.....	6.4	5.1	1.5	3.4	19.7	13.4	22.4	23.4	29.2	25.8	15.5	8.2
9.....	6.4	5.1	1.6	3.1	18.3	12.5	22.0	23.4	28.9	25.3	15.1	8.1
10.....	6.3	5.0	1.9	3.0	15.8	11.9	21.1	22.9	28.9	24.8	14.7	7.9
11.....	6.2	5.1	2.4	3.3	13.7	11.5	20.7	22.7	28.9	24.4	14.4	7.6
12.....	6.1	5.4	2.8	7.6	12.3	11.2	19.7	22.0	28.9	24.0	13.9	7.4
13.....	6.0	5.4	3.3	9.3	11.0	10.9	18.8	21.8	28.9	23.7	13.6	7.2
14.....	6.1	4.9	3.2	8.6	10.2		18.2	21.7	29.0	23.2	13.4	6.9
15.....	6.0	4.7	3.6	10.0	9.4	9.9	17.8	21.8	29.1	22.7	13.3	6.7
16.....	5.8	4.6	4.7	9.2	8.6		17.3	22.0	29.5	22.2	13.2	6.7
17.....	5.7	4.4	4.7		8.1	9.3	17.3	22.5	29.6	21.6	13.1	6.7
18.....	5.7	4.0	4.4	6.6	7.6	9.0	17.7	23.0	29.5	21.2	12.9	6.5
19.....	5.6	4.2	4.0	6.5	7.2	8.7	18.7	22.9	29.0	20.7	12.8	6.3
20.....	5.6	4.0	3.7	6.3	6.7	8.3	19.7	22.7	28.2	20.3	12.5	6.2
21.....	5.4	3.8	3.5	5.5	6.9	8.3	21.0	22.5	27.8	20.1	12.4	6.2
22.....	5.3	3.6	3.2	4.7	8.0	8.2	21.8	22.4	27.6	19.7	12.3	6.2
23.....	5.1	3.5	3.0	4.5	8.4	8.2	22.8	23.2	27.6	19.5	11.9	6.2
24.....	5.2	3.5	3.0	4.3	8.7	8.5	24.4	23.6	27.6	19.1	11.7	6.4
25.....	5.0	3.3	2.8	3.9	9.5	8.9	26.1	23.4	27.4	18.8	11.4	6.4
26.....	5.1	3.1	3.2	3.7	10.2	9.8	26.0	23.0	27.3	18.5	11.1	6.4
27.....	5.0	3.1	3.2		13.1	11.2	25.8	22.5	27.1	18.2	10.8	6.6
28.....	5.0	2.9	3.4	3.0	15.9	11.6	25.2	22.1	27.3	18.0	10.6	6.5
29.....	5.6	2.6	3.3	3.2		12.6	24.7	22.1	27.5	17.8	10.4	6.7
30.....	5.8	2.6	3.6	2.8		13.2	24.4	22.5	27.7	17.5	10.1	6.7
31.....	5.7		3.5	2.6		13.8		22.5		17.2	9.9	
1881-82.												
1.....	6.6	5.0		2.5	.4	5.6	10.5	11.6	26.9	31.2	17.2	10.8
2.....	6.6	5.1	3.6	2.6	.6	4.9	10.7	11.7	27.5	30.9	16.8	10.6
3.....	6.3	5.3	3.1	2.7	.7	5.2	11.5	12.3	28.9	30.5	16.3	10.1
4.....	6.2	5.3	3.1	2.7	.8	5.2	12.5	13.1	30.7	30.5	16.0	9.9
5.....	6.0	5.3	3.0	3.2	1.3	4.9	13.3	14.4	32.6	30.2	15.7	9.6
6.....	5.9	6.1	3.0	3.7	1.5	4.4	13.8	15.5	34.3	30.0	15.5	9.4
7.....	5.9	5.9	2.9	3.8	1.5	3.6	14.5	16.2	36.2	29.8	15.3	9.1
8.....	5.7	5.8	3.0	3.7	1.5	3.4	14.5	16.4	38.2	29.6	15.0	8.9
9.....		6.8	3.1	3.7	1.4	3.2	14.1	16.8	39.8	28.9	14.9	8.7
10.....	5.4	6.9	3.1	3.6	1.5	2.9	13.5	16.7	40.0	28.3	14.7	8.6
11.....	5.3	6.4	3.6	3.6	1.4	2.6	13.1	16.9	40.0	27.6	14.7	8.4
12.....	5.1	6.0	3.3	3.3	1.1	2.4	12.6	16.9	40.7	26.6	14.8	8.2
13.....	4.8	6.0	3.4	3.1	1.1	2.1	12.4	17.2	40.8	26.0	14.8	8.2
14.....	4.7	5.6	3.3	2.8	1.0	2.0	11.8	17.7	40.8	25.5	14.9	7.9
15.....	4.8	5.7	3.2	2.6	1.0	2.0	11.7	19.0	40.7	24.7	14.9	7.7
16.....	4.7	5.8	3.0	2.4	1.4	2.0	11.6	19.6	40.2	23.9	15.1	7.5
17.....	4.6	5.5	3.2	2.0	1.5	2.1	11.9	19.8	39.9	23.2	15.2	7.3
18.....	4.5	5.5	3.2	1.8	1.5	2.2	12.3	19.5	39.9	22.5	15.4	7.3
19.....	4.6	5.2	3.5	1.5	1.2	2.3	12.2	19.1	40.2	21.8	15.4	7.3
20.....	4.6	5.2	3.2	1.6	.5	2.5	12.2	18.7	39.8	21.2	15.4	7.2
21.....	4.5	5.0	3.1	1.6	.5	2.4	12.7	18.5	39.4	20.7	15.1	7.1
22.....	4.4	4.8	3.1	1.4	.5	2.3	13.1	18.2	38.3	20.2	14.6	7.1
23.....	4.3	4.6	3.1	1.4	.4	2.3	13.3	18.1	37.2	19.9	14.1	6.9
24.....	4.3	4.1	3.2	1.5	.6	2.3	13.3	18.2	36.1	19.6	13.6	6.6
25.....	4.2	4.0	3.2	1.4	.7	2.7	13.6	18.6	35.0	19.3	13.3	6.5
26.....	4.2	4.1	2.7	1.5	.8	3.1	13.4	19.5	34.2	19.0	12.8	6.1
27.....	4.3	4.0	2.7	1.7	1.5	4.1	13.1	20.6	33.3	18.8	12.4	6.0
28.....	4.4	3.7	2.7	1.5	3.6	5.4	12.7	22.5	32.7	18.7	12.0	6.0
29.....	4.6	3.6	2.6	1.3		7.2	12.4	24.1	32.1	18.3	11.6	5.8
30.....	5.1	3.5	2.3	.4		8.7	11.9	25.6	31.7	17.9	11.4	5.7
31.....	5.0		2.3	.4		10.0		27.0		17.6	11.0	

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1882-83.												
1.	5.5	4.8	2.5	3.8	7.8	6.4	15.6	10.7	25.3	27.0	13.1	8.1
2.	5.4	5.3	2.4	3.1	6.5	6.8	15.0	11.5	25.3	27.0	12.9	8.0
3.	5.3	4.8	2.3	2.4	4.4	6.2	14.1	12.8	25.3	26.9	12.7	7.7
4.	5.1	4.8	2.4	2.4	.....	5.9	13.2	13.4	25.2	26.5	12.4	7.5
5.	5.1	4.7	2.8	2.0	1.8	6.2	12.9	13.8	25.1	26.1	12.2	7.4
6.	5.0	4.9	2.8	3.6	1.8	6.3	12.0	14.0	25.0	25.8	12.1	7.3
7.	5.0	4.8	3.1	4.0	1.7	7.2	11.9	14.0	25.0	25.3	12.1	7.1
8.	5.0	4.8	3.3	3.8	1.5	7.4	11.8	14.6	25.0	24.6	11.8	7.0
9.	5.0	4.5	3.5	3.8	1.2	7.2	10.9	15.9	25.3	24.0	11.8	6.7
10.	4.9	4.8	3.8	4.4	.8	7.0	10.9	18.0	26.1	23.7	11.8	6.5
11.	4.9	4.8	4.5	3.9	1.1	7.6	11.0	19.1	27.0	23.3	11.8	6.4
12.	5.3	4.3	4.7	4.2	1.0	8.3	10.9	19.8	27.8	23.0	11.8	6.2
13.	5.5	4.1	8.5	4.0	1.3	8.5	11.2	21.1	28.2	22.5	11.8	6.1
14.	5.4	3.8	9.8	4.0	1.1	8.7	10.5	22.5	28.3	22.1	11.8	6.1
15.	5.6	3.5	8.4	3.7	1.3	8.8	10.2	24.3	27.9	21.7	11.4	6.0
16.	5.7	3.3	10.3	3.3	1.7	8.9	10.1	25.0	27.4	21.4	11.4	6.0
17.	5.8	3.3	10.8	3.4	2.0	8.8	9.7	24.9	27.1	20.8	11.2	6.1
18.	5.5	3.1	9.5	2.9	2.0	9.5	9.5	25.1	26.9	20.0	11.1	6.2
19.	5.5	3.2	8.5	2.8	2.1	9.8	9.4	25.3	27.1	19.7	11.1	6.2
20.	5.4	3.2	7.6	1.8	2.7	10.9	9.3	25.1	27.4	19.1	10.7	6.0
21.	5.2	3.0	7.1	1.3	3.0	10.8	9.2	24.7	27.4	18.5	10.7	6.0
22.	5.1	3.0	7.4	.2	3.4	11.0	9.2	24.4	27.7	17.7	10.7	6.0
23.	5.0	3.1	7.3	.4	4.2	11.3	9.5	24.6	27.7	17.0	10.4	5.8
24.	4.9	2.8	6.4	.6	4.6	11.5	9.5	25.7	27.5	16.4	10.2	5.5
25.	4.7	2.8	6.3	.8	5.0	12.3	9.4	26.3	27.1	16.0	9.9	5.3
26.	4.5	2.9	6.8	1.7	5.0	12.6	9.0	26.0	27.1	15.6	9.8	5.2
27.	4.6	2.8	5.8	2.1	6.5	12.6	9.1	25.4	27.0	15.1	9.5	5.0
28.	4.4	2.8	5.5	3.1	6.3	14.1	9.4	25.1	27.0	14.5	9.1	4.9
29.	4.4	2.8	5.0	4.2	.....	13.6	9.6	24.9	27.0	14.0	9.0	4.6
30.	4.4	2.4	4.8	5.2	.....	14.2	10.0	24.9	26.2	13.9	8.6	4.5
31.	4.5	.....	4.0	7.8	.....	16.4	.....	25.4	.....	13.5	8.4	.....
1883-84.												
1.	4.3	2.3	1.8	1.1	.6	5.6	5.6	14.5	27.5	26.3	14.6	9.1
2.	4.2	2.2	1.8	.7	.6	5.3	5.6	13.8	27.4	26.0	14.3	9.1
3.	4.2	2.4	2.3	.8	.6	4.8	5.6	14.1	27.7	25.4	14.1	9.0
4.	4.1	2.0	2.8	1.9	.7	4.5	5.9	14.3	28.6	25.0	14.1	9.0
5.	4.0	2.0	2.9	2.0	.5	4.6	6.4	14.5	29.4	24.2	13.9	8.9
6.	3.9	2.0	2.9	2.0	.4	4.0	6.9	15.6	30.1	23.6	13.9	8.9
7.	3.8	2.0	2.8	2.2	.2	4.0	7.4	15.5	30.6	22.9	13.8	8.9
8.	3.8	2.0	2.5	3.0	-.2	4.0	8.0	15.5	30.8	22.4	13.6	8.8
9.	4.0	1.9	2.3	3.8	-.2	3.9	8.8	15.2	30.7	21.6	13.4	8.9
10.	4.1	1.7	2.2	3.5	-.2	4.0	9.3	15.0	30.6	21.0	13.4	8.9
11.	3.9	1.9	2.0	3.2	-.6	4.2	10.3	16.3	30.7	20.5	13.3	8.7
12.	3.9	1.8	1.8	2.8	-1.5	4.2	11.0	18.1	31.0	20.0	13.2	8.5
13.	3.9	1.8	1.8	2.7	-1.9	4.3	12.2	19.6	31.4	19.4	13.1	8.2
14.	4.0	1.8	1.6	2.5	-2.0	3.9	13.3	20.5	31.0	18.8	13.0	8.0
15.	3.9	1.7	1.5	2.3	-1.9	3.6	13.1	20.7	31.0	18.4	13.0	7.8
16.	3.6	1.6	1.4	2.0	-1.8	3.3	12.9	20.6	30.6	18.2	12.9	7.6
17.	3.5	1.6	1.2	1.7	-1.8	3.2	12.4	21.3	30.6	18.0	12.6	7.5
18.	3.5	1.5	1.2	1.5	-1.6	3.3	12.2	21.9	29.8	17.7	12.6	7.4
19.	3.4	1.5	1.2	1.6	-1.5	3.2	11.5	22.6	29.4	17.3	12.5	7.1
20.	3.4	1.4	.9	1.4	-1.1	3.9	11.4	24.0	29.1	16.8	12.4	6.8
21.	3.2	1.4	.9	1.4	.8	4.5	11.4	24.6	28.9	16.5	12.0	6.5
22.	3.1	1.6	1.0	1.3	2.9	5.1	11.8	25.5	29.2	16.2	11.8	6.1
23.	3.1	2.0	1.1	1.1	3.7	5.5	12.4	25.8	28.9	16.1	11.2	5.8
24.	2.8	1.9	1.2	.6	.....	5.8	13.4	25.9	28.8	15.9	11.1	5.6
25.	2.7	1.8	1.3	.4	5.1	5.8	14.6	26.0	28.8	15.7	10.7	5.5
26.	2.7	1.8	1.9	.3	6.3	5.7	15.5	26.1	28.6	15.5	10.2	5.3
27.	2.4	3.0	2.5	.2	8.8	5.9	15.8	26.9	28.5	15.2	9.9	5.0
28.	2.5	2.9	2.3	.7	7.4	5.9	15.6	27.6	27.9	14.9	9.7	5.0
29.	2.5	2.4	2.0	.9	6.2	5.8	15.1	28.6	27.3	14.8	9.4	4.8
30.	2.6	2.0	2.0	.8	.....	5.9	15.0	28.7	26.9	14.7	9.0	4.8
31.	2.6	.....	1.8	.5	.....	5.8	.....	28.1	.....	14.5	9.1	.....

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1884-85.												
1.....	4.4	6.2	3.9	1.1	2.8	8.5	10.2	11.4	18.6	-----	11.2	8.2
2.....	4.5	6.2	3.9	1.2	2.9	8.7	10.6	11.8	19.3	21.0	10.8	8.2
3.....	4.4	6.4	3.6	1.4	4.3	8.2	11.0	12.3	20.1	20.8	10.6	7.9
4.....	4.2	7.0	3.6	1.8	7.7	7.9	11.6	13.1	20.5	20.7	10.4	7.8
5.....	4.1	6.6	3.4	1.9	7.3	7.4	11.9	14.1	20.6	20.3	10.4	7.6
6.....	4.1	6.5	3.6	2.5	7.9	7.1	12.5	15.0	20.7	20.1	10.4	7.5
7.....	4.0	6.1	3.5	3.2	7.3	6.9	12.9	16.1	20.9	19.6	10.4	7.2
8.....	4.0	6.1	3.8	4.8	7.9	6.4	13.4	17.1	21.0	19.4	10.3	7.2
9.....	4.2	6.1	3.8	4.7	7.7	6.4	13.6	18.0	20.4	18.9	10.0	7.0
10.....	4.3	6.0	3.3	4.7	7.7	6.5	13.6	18.4	20.1	18.6	10.2	7.0
11.....	4.4	6.0	3.2	4.8	7.6	6.7	13.3	18.3	19.9	18.1	10.1	6.8
12.....	5.1	6.0	2.9	4.7	7.6	7.2	13.1	18.3	19.7	17.9	9.8	6.6
13.....	5.3	6.0	2.7	4.2	6.8	7.7	13.2	18.1	19.9	17.2	9.5	6.6
14.....	5.4	5.8	2.4	3.8	8.3	8.2	13.3	18.3	20.5	16.9	9.5	6.8
15.....	6.0	5.6	2.4	3.3	7.5	8.5	13.8	19.1	21.3	16.5	9.4	6.6
16.....	6.0	5.6	-----	3.1	7.5	9.0	14.0	20.2	21.3	16.0	9.2	7.1
17.....	6.0	5.4	-----	2.8	7.4	9.0	14.1	20.5	21.4	15.6	9.2	7.4
18.....	6.2	5.4	-----	2.5	6.8	9.3	14.1	20.5	21.4	15.4	9.0	6.8
19.....	6.5	5.3	-3.3	2.3	7.2	9.8	13.8	20.3	21.6	15.0	9.0	6.8
20.....	6.5	5.2	-3.3	2.3	7.5	9.7	13.4	19.9	21.7	14.8	9.0	6.6
21.....	6.4	5.0	-3.2	1.9	7.5	9.4	12.9	19.9	22.0	14.4	9.0	6.4
22.....	6.3	5.0	-----	1.8	7.8	10.2	12.6	20.0	22.1	14.3	8.9	6.2
23.....	6.3	4.9	-2.7	1.5	8.2	10.3	12.4	20.0	22.5	13.9	8.8	6.0
24.....	6.2	4.7	-1.2	1.5	8.8	10.4	12.2	20.0	22.1	13.6	9.0	5.8
25.....	6.2	4.6	-9.3	1.3	8.5	10.5	11.6	19.5	21.9	13.4	8.9	5.8
26.....	6.3	4.5	.1	1.1	8.5	10.1	11.6	19.2	21.8	13.0	8.7	6.0
27.....	6.1	4.4	.2	1.4	8.3	10.1	11.3	18.8	21.7	12.6	8.8	5.8
28.....	6.2	4.3	.2	1.3	8.1	9.8	11.2	18.5	21.4	12.2	8.7	5.8
29.....	6.2	4.3	.3	1.3	-----	10.0	11.0	18.5	21.3	11.9	8.6	6.0
30.....	6.2	4.3	.7	-----	-----	10.0	11.2	18.4	21.1	11.6	8.4	6.2
31.....	6.2	-----	.9	2.8	-----	10.0	-----	18.3	-----	11.4	8.4	-----
1885-86.												
1.....	6.2	2.6	3.3	3.8	8.4	5.5	5.2	12.4	27.7	21.4	12.7	6.3
2.....	6.4	2.8	3.3	3.7	8.5	5.3	5.2	12.2	27.9	21.1	12.5	6.3
3.....	6.2	3.3	3.0	3.5	8.6	5.1	5.4	12.2	28.2	20.8	12.1	6.1
4.....	6.4	3.0	3.2	2.9	8.3	4.9	6.1	11.9	28.7	20.5	11.8	5.9
5.....	6.4	2.9	3.3	2.9	8.5	4.8	6.6	11.8	29.1	20.1	11.7	5.9
6.....	6.2	3.0	3.3	3.0	9.0	4.7	7.1	11.6	29.4	19.8	11.4	5.9
7.....	6.0	3.5	3.3	2.8	8.9	4.3	7.2	11.5	29.8	19.4	11.1	5.9
8.....	5.8	4.2	3.6	2.5	8.6	4.4	7.5	11.8	30.3	19.1	10.8	5.8
9.....	5.8	3.7	3.6	2.2	8.4	4.2	7.6	12.0	30.4	18.6	10.7	5.9
10.....	5.6	3.3	3.5	2.2	8.9	3.8	7.8	12.5	30.1	18.2	10.5	5.9
11.....	5.6	3.6	3.4	1.9	9.7	3.9	8.4	13.2	29.7	17.6	10.3	5.7
12.....	5.4	4.0	3.2	1.8	9.3	3.8	9.1	13.6	29.7	17.2	10.1	5.5
13.....	5.2	4.0	3.1	1.9	9.2	4.0	9.6	13.6	29.4	16.8	9.9	5.3
14.....	5.0	4.0	2.8	2.1	9.7	4.2	10.4	13.6	28.6	16.8	9.7	5.1
15.....	4.8	3.9	2.6	1.9	10.3	4.1	11.1	13.4	27.8	16.7	9.6	5.0
16.....	4.9	3.7	2.6	2.0	9.7	4.7	11.5	13.5	27.3	16.5	9.5	5.0
17.....	4.6	3.6	3.2	1.6	8.9	5.2	11.5	13.3	26.6	16.4	9.2	4.9
18.....	4.5	3.1	3.7	1.6	8.4	5.0	11.4	13.3	25.9	16.3	9.0	4.7
19.....	4.3	3.2	3.5	.7	7.8	4.8	11.9	13.7	25.3	16.1	8.7	4.6
20.....	4.1	3.0	3.3	-2	7.3	4.6	12.1	14.6	24.8	15.9	8.6	4.4
21.....	3.9	3.1	3.4	.3	6.9	4.4	12.1	16.5	24.3	15.7	8.4	4.2
22.....	3.6	3.1	3.7	-.1	6.7	4.6	12.1	18.9	23.9	15.5	8.2	4.1
23.....	3.6	3.2	3.4	.6	6.3	5.0	11.8	20.2	23.3	15.2	7.8	3.9
24.....	3.4	3.0	3.3	1.0	6.4	4.8	12.0	20.8	23.1	15.0	7.6	4.0
25.....	3.3	3.2	3.2	1.6	6.1	4.6	12.1	21.2	22.8	14.6	7.4	3.9
26.....	3.2	3.2	3.3	-----	6.1	4.7	11.8	22.0	22.5	14.3	7.4	3.6
27.....	3.2	3.3	3.4	-----	6.0	5.1	12.4	23.5	22.1	14.2	7.2	3.5
28.....	2.9	3.4	3.3	-----	5.9	5.1	12.4	24.9	21.8	13.9	6.9	3.4
29.....	2.9	3.4	3.8	9.5	-----	5.2	12.6	26.4	21.6	13.5	6.9	3.3
30.....	2.8	3.4	3.8	8.5	-----	5.2	12.5	27.1	21.5	13.2	6.7	3.2
31.....	3.0	-----	3.9	7.0	-----	5.2	-----	27.3	-----	12.9	6.5	-----

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1886-87.												
1.....	3.1	1.3	-0.4	2.3	3.6	0.8	11.3	15.5	34.7	33.9	18.8	10.5
2.....	3.1	1.1	-.3	2.5	3.6	1.2	11.6	17.4	37.3	33.3	18.3	10.3
3.....	3.1	1.1	-.1	2.6	.....	1.2	12.0	17.3	38.1	32.9	18.0	10.2
4.....	3.1	1.1	.0	2.3	2.7	.8	13.1	16.9	37.6	32.7	17.5	10.1
5.....	2.9	1.3	.0	2.6	1.7	1.1	13.2	16.5	36.2	32.4	17.0	9.8
6.....	2.8	1.1	.0	2.5	.5	2.0	12.7	16.2	35.1	32.2	16.5	9.6
7.....	2.5	.8	-.1	2.8	.8	3.1	12.3	16.3	34.4	31.8	16.2	9.2
8.....	2.5	.8	-.6	2.5	.4	3.7	12.1	16.7	33.7	31.5	16.0	9.0
9.....	2.0	.8	-.8	2.1	.1	4.6	12.2	16.9	32.8	31.4	15.5	8.8
10.....	2.0	.9	-.8	2.4	.4	6.1	12.7	16.7	32.2	31.3	15.1	8.4
11.....	1.9	.5	.7	2.4	.3	7.0	12.9	16.4	32.0	30.6	14.8	8.3
12.....	1.7	.5	1.0	2.4	.4	8.0	13.0	16.7	32.2	29.9	14.6	8.1
13.....	2.0	.6	1.5	2.6	.5	8.8	12.9	17.0	32.8	29.2	14.3	7.8
14.....	2.0	.6	1.4	3.4	1.0	9.4	12.8	17.0	33.4	28.6	14.0	7.8
15.....	1.9	.5	1.2	3.5	.9	9.5	12.5	16.7	34.0	27.9	13.7	7.6
16.....	1.8	.6	1.2	3.2	.2	9.3	12.2	16.3	34.4	27.1	13.4	7.5
17.....	1.7	.2	1.4	3.2	.4	9.5	12.3	16.1	35.9	26.2	13.0	7.4
18.....	1.7	.1	1.5	3.5	.5	10.8	12.5	16.3	38.7	25.4	12.8	7.3
19.....	1.8	.2	1.3	3.5	.7	11.9	12.8	17.3	39.3	24.6	12.6	7.0
20.....	1.8	.3	1.6	3.1	.5	12.4	12.7	19.1	38.7	23.8	12.4	6.8
21.....	1.7	.3	1.4	2.9	.5	12.5	12.7	21.4	37.8	23.2	12.3	6.7
22.....	1.6	.1	1.3	2.8	.6	11.4	12.6	22.9	37.4	22.8	12.2	6.5
23.....	1.6	-.1	1.3	4.7	.8	10.8	12.6	23.4	37.1	22.3	12.0	6.2
24.....	1.8	.0	1.3	3.7	.6	10.8	12.3	23.3	37.5	21.9	11.9	6.0
25.....	1.6	.1	1.6	3.9	.4	10.1	12.3	23.5	38.2	21.4	11.8	6.0
26.....	1.5	.1	2.4	3.5	.6	10.3	12.2	24.3	38.3	21.1	11.7	5.9
27.....	1.4	-.2	2.0	3.3	.6	10.1	12.4	25.9	37.8	20.7	11.7	5.5
28.....	1.5	-.3	1.5	3.0	.7	10.1	12.7	27.7	37.0	20.3	11.4	5.4
29.....	1.5	-.3	1.4	3.2	.....	10.1	13.0	28.6	36.0	20.0	11.3	5.1
30.....	1.3	-.3	1.4	4.2	.....	10.2	13.7	30.0	34.9	19.6	10.9	5.1
31.....	1.1	.....	1.6	4.3	.....	10.5	.....	32.3	.....	19.2	10.9	.....
1887-88.												
1.....	5.0	3.1	2.3	2.2	8.8	4.8	5.2	13.7	19.9	21.2	12.4	8.7
2.....	4.8	3.1	2.2	2.2	8.2	4.7	5.1	14.0	20.5	20.7	12.2	8.5
3.....	4.7	3.1	2.5	2.1	7.7	4.5	5.1	14.4	21.3	20.0	12.0	8.1
4.....	4.6	3.0	2.4	1.9	7.5	4.4	5.3	15.2	22.0	19.9	11.7	8.2
5.....	4.8	3.0	2.4	1.3	7.2	4.1	5.6	15.6	22.7	19.7	11.5	8.0
6.....	4.6	3.0	2.6	.6	6.7	4.1	5.5	15.8	23.4	19.4	11.3	7.9
7.....	4.6	2.8	3.8	.3	6.2	4.0	5.6	16.2	24.0	19.1	11.1	7.9
8.....	4.6	2.8	3.5	-.4	5.9	4.0	5.5	16.3	24.5	18.8	10.9	7.7
9.....	4.6	2.8	3.2	-1.0	5.7	3.6	5.5	16.6	24.7	18.4	10.7	7.6
10.....	4.7	2.9	3.4	-1.2	5.6	3.6	5.5	17.0	25.0	18.0	10.7	7.6
11.....	4.7	2.9	3.6	-1.4	5.6	3.5	5.8	17.8	25.3	17.6	10.5	7.5
12.....	4.5	2.9	4.0	-1.0	5.6	3.6	5.8	18.1	25.3	17.1	10.2	7.3
13.....	4.5	3.0	4.2	-.9	6.0	3.3	5.9	17.9	25.6	16.7	10.2	7.4
14.....	4.5	3.0	4.0	-.9	6.0	3.5	6.0	17.7	25.4	16.3	10.1	7.2
15.....	4.6	3.1	3.9	-1.9	6.4	3.7	6.1	17.5	25.7	16.1	9.9	7.0
16.....	4.4	3.5	3.9	-2.3	6.7	4.1	7.1	17.7	25.7	15.9	9.8	6.7
17.....	4.3	3.9	3.8	-2.2	6.5	4.3	8.1	18.4	25.7	15.6	9.6	6.5
18.....	4.0	4.3	3.4	-1.8	6.5	4.6	9.2	19.3	25.9	15.5	9.4	6.4
19.....	4.3	4.4	3.6	-1.7	6.2	4.7	10.0	19.6	25.7	15.2	9.4	6.2
20.....	4.1	4.0	3.3	-1.8	6.0	5.0	10.0	19.4	25.5	15.0	9.4	5.8
21.....	3.8	3.6	3.2	-1.2	5.7	5.7	10.2	19.1	25.2	14.7	9.2	5.7
22.....	3.7	3.5	3.1	-.8	5.6	5.4	10.7	18.9	24.8	14.4	9.1	5.5
23.....	3.8	3.3	2.7	-.7	5.4	5.4	11.4	18.5	24.4	13.9	9.0	5.4
24.....	3.6	3.2	2.6	-.5	5.2	5.7	12.4	18.2	23.9	13.8	9.0	5.3
25.....	3.5	3.2	2.8	.2	5.2	5.7	13.2	17.9	23.4	13.6	8.9	5.2
26.....	3.4	3.1	2.6	3.6	5.1	5.6	14.2	17.7	22.9	13.4	8.9	5.1
27.....	3.4	2.9	2.8	4.0	4.9	5.2	14.9	17.7	22.6	13.3	8.9	5.0
28.....	3.3	2.6	2.4	5.4	4.8	5.5	14.9	17.8	22.2	13.1	8.9	4.9
29.....	3.2	2.4	2.4	7.0	4.8	5.4	14.5	18.0	21.8	13.0	8.9	4.8
30.....	3.1	2.4	2.3	8.4	.....	5.2	14.1	18.4	21.5	12.9	8.8	4.6
31.....	3.1	.....	2.3	10.2	.....	5.1	.....	19.2	.....	12.7	8.8	.....

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1888-89.												
1	4.5	3.0	1.7	1.1	-0.1	-0.2	3.9	8.7	14.3	10.1	7.6	4.6
2	4.3	3.7	1.7	.7	-.1	.0	4.5	8.8	14.6	10.1	7.5	4.3
3	4.2	3.8	1.6	.7	-.3	.0	4.6	9.4	14.6	10.0	7.5	4.3
4	4.2	3.5	1.5	.2	-.1	.1	4.8	9.9	14.5	9.9	7.5	4.3
5	4.0	3.3	1.3	.1	-.3	.1	5.3	10.3	14.7	9.7	7.7	4.1
6	3.8	3.3	1.4	.2	-.3	.2	5.7	11.0	14.4	9.7	7.8	3.8
7	3.8	3.5	1.4	.2	-.2	.3	5.8	11.3	14.5	9.4	7.7	3.8
8	3.7	3.2	1.5	.2	-.2	.3	6.0	11.1	14.7	9.1	7.7	3.8
9	3.7	2.9	1.7	.1	-.2	.4	6.2	11.3	14.6	9.0	7.7	3.7
10	3.7	2.8	1.7	.2	-.2	.4	6.0	11.4	14.4	8.7	7.5	3.6
11	3.7	2.7	1.7	.5	-.2	.6	6.3	11.3	14.2	8.5	7.4	3.6
12	3.5	2.6	2.2	.4	-.7	.8	6.6	11.2	14.0	8.4	7.3	3.2
13	3.6	2.7	2.2	.2	-.3	1.2	6.6	11.3	13.9	8.2	7.2	3.3
14	3.4	2.7	2.1	.3	-.1	1.5	6.9	11.3	13.6	8.0	6.8	3.1
15	3.5	2.6	2.0	.2	-.2	1.8	7.1	11.4	13.2	8.0	6.6	2.8
16	3.4	2.4	2.5	-.1	-.2	2.0	7.5	12.0	13.1	7.8	6.4	2.9
17	3.2	2.5	2.7	-.2	-.2	3.0	7.3	12.9	13.0	7.7	6.2	2.7
18	3.4	2.6	2.4	-.1	-.4	3.5	7.3	13.7	12.8	7.7	6.0	2.5
19	2.9	2.3	2.4	.0	-.3	3.8	7.2	14.1	12.5	7.6	5.9	2.3
20	2.9	2.2	2.6	-.3	-1.0	3.6	7.0	14.0	12.4	7.5	5.9	2.0
21	2.7	2.1	2.6	-.3	-.3	3.9	7.2	14.1	12.0	7.6	5.8	2.1
22	2.7	2.0	2.4	-.1	-.2	3.9	7.2	14.1	11.7	7.5	5.7	1.9
23	2.3	2.1	2.4	-.3	-.3	3.8	7.2	13.8	11.7	7.6	5.6	1.7
24	2.5	2.1	2.3	-.1	-.3	3.9	7.1	13.8	11.5	7.8	5.5	1.7
25	2.5	2.1	2.1	.2	-.4	3.9	7.6	14.0	11.1	7.8	5.5	1.6
26	2.5	2.0	2.0	.2	-.3	3.7	7.6	14.0	10.9	7.8	5.3	1.4
27	2.5	2.0	2.0	.1	-.3	3.5	7.5	13.8	10.7	7.9	5.1	1.3
28	2.6	2.0	2.0	.0	-.1	3.7	7.7	13.8	10.6	7.8	5.0	1.3
29	2.8	1.7	1.7	-.1	.....	3.6	8.2	13.7	10.4	7.7	4.8	1.3
30	2.8	1.7	1.5	-.2	.....	3.8	8.2	13.9	10.2	7.6	4.6	1.4
31	2.7	.....	1.9	-.2	.....	3.9	.....	14.3	.....	7.7	4.5	.....
1889-90.												
1	1.4	2.1	.5	-1.2	.3	-.7	6.2	15.8	24.6	18.3	11.9	6.6
2	1.4	2.2	.4	-1.7	4.3	-.3	6.3	17.3	23.8	18.1	11.8	6.4
3	1.4	2.1	.4	.....	8.2	-.2	6.5	18.8	23.1	18.0	11.5	6.4
4	1.6	2.0	.3	.....	9.0	.0	6.6	20.5	23.0	17.9	11.2	6.2
5	1.7	1.8	.4	.....	8.9	.2	7.0	21.7	22.5	18.1	10.9	6.1
6	1.8	1.7	.4	.....	9.0	1.1	7.3	22.3	21.9	18.0	10.6	6.2
7	1.8	1.8	.4	(a)	9.2	1.7	7.8	22.9	21.3	17.9	10.5	6.1
8	1.8	1.6	.3	.....	8.5	2.6	8.2	23.7	20.9	17.8	10.0	6.0
9	1.8	1.4	.5	.....	7.6	3.0	8.5	25.0	20.7	17.8	9.6	5.9
10	1.9	1.3	.5	.....	6.9	3.7	8.7	26.6	20.9	17.9	9.4	5.7
11	2.0	1.4	.4	.....	5.9	5.4	8.7	27.9	21.2	17.7	9.2	5.7
12	2.2	1.1	.3	.....	4.9	5.7	8.4	28.2	21.4	17.4	9.2	5.4
13	2.0	1.2	.2	.....	4.3	5.2	8.5	28.5	21.4	17.2	9.0	5.1
14	2.2	1.2	.2	.....	3.9	4.5	8.5	28.8	21.0	16.7	8.8	5.0
15	2.4	1.2	.1	.....	3.5	3.9	8.1	28.7	21.0	16.4	8.8	4.9
16	2.6	1.2	.0	.....	3.0	3.4	7.9	28.4	20.6	16.2	8.8	4.4
17	2.7	1.0	-.2	-2.0	2.8	3.4	7.7	28.3	20.3	15.8	8.6	4.3
18	2.6	1.1	-.2	-2.0	2.5	3.6	7.4	28.5	20.0	15.5	8.6	4.3
19	2.8	.9	-.3	-1.7	2.1	4.1	7.4	28.6	19.8	15.3	8.6	3.8
20	2.7	.9	-.4	-1.6	1.9	4.6	7.5	28.8	19.7	14.9	8.5	3.8
21	2.6	.9	-.3	-1.6	1.6	5.5	7.8	28.5	19.6	14.5	8.5	3.7
22	2.6	.8	-.4	-1.5	1.6	6.3	8.5	28.1	19.5	14.1	8.4	3.4
23	2.6	.8	-.4	-1.6	.9	6.7	9.7	27.7	19.3	13.9	8.2	3.1
24	2.5	.9	-.5	-1.8	1.0	7.7	10.6	27.5	19.0	13.6	8.0	3.0
25	2.5	.8	-.6	-1.7	1.1	7.9	11.4	27.0	18.8	13.4	7.9	2.9
26	2.2	.9	-.7	-1.5	.5	8.2	11.8	26.6	18.7	13.2	7.7	2.9
27	2.0	.8	-.7	-1.3	.0	8.0	12.2	26.6	18.6	13.0	7.5	2.8
28	2.2	.7	-.7	.....	.....	7.7	12.8	26.5	18.8	12.9	7.3	2.7
29	2.2	.6	-.9	.....	.....	7.1	13.5	26.6	18.8	12.4	7.1	2.4
30	2.2	.4	-1.2	.2	.....	6.7	14.6	26.3	18.6	12.4	6.9	2.4
31	2.2	.....	-1.4	.0	.....	6.1	.....	25.6	.....	12.0	6.9	.....

a Gage height of -3.9 feet for Jan. 7, 1890, was estimated from a reading below the locks.

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890-91.												
1	2.4	1.9	0.5	-0.3	0.6	0.2	3.3	10.6	21.0	17.8	12.0	7.0
2	2.2	1.8	-.9	-.3	.5	.0	2.9	11.1	21.1	17.5	12.1	6.7
3	2.2	1.7	-.7	-.5	.1	-.6	2.8	11.1	21.0	17.1	12.0	6.4
4	2.3	1.3	-.7	-.7	-.1	-.8	2.4	11.3	20.9	16.8	11.9	6.6
5	2.3	1.8	.7	.5	-.1	-1.0	2.3	11.5	20.9	16.6	11.7	6.5
6	2.5	1.7	.7	.4	-.3	-.9	2.3	11.8	20.8	16.4	11.6	6.4
7	2.4	1.5	-.9	-.6	-.4	-.5	2.2	12.1	20.8	16.1	11.3	6.3
8	2.8	1.6	.8	.5	-.4	-.6	2.7	13.2	20.8	16.0	11.3	6.2
9	2.7	1.5	-.7	-.4	-.7	-.8	2.9	14.4	20.8	15.8	11.0	6.1
10	2.7	1.4	.7	.4	-.6	-.4	3.0	15.2	20.5	15.8	10.7	6.0
11	2.5	1.4	.7	.3	-.7	-.3	3.3	15.4	20.3	15.8	10.5	5.9
12	2.7	1.4	.5	.0	-.5	-.4	3.5	15.0	20.0	15.8	10.3	5.7
13	2.7	1.1	.4	.0	-.6	-.5	3.6	14.7	19.6	15.6	10.2	5.6
14	2.4	1.5	.2	-.2	-.5	-.3	3.5	15.0	19.3	15.5	9.9	5.5
15	2.5	1.3	.3	-.4	-.4	-.2	4.0	15.5	19.3	15.3	9.7	5.4
16	2.4	1.2	.2	-.5	-.6	-.1	4.5	16.3	19.7	15.1	9.6	5.4
17	2.4	1.2	.2	-.4	-.5	.2	4.8	17.3	19.8	14.7	9.3	5.3
18	2.2	1.4	.1	-.6	-.6	.2	5.5	18.3	19.6	14.3	9.1	5.2
19	2.1	1.2	.1	-.5	-.5	.3	6.0	19.3	19.4	14.0	8.9	5.0
20	2.1	1.0	.2	-.2	-.2	1.2	6.5	20.2	19.4	13.8	8.7	4.8
21	2.0	1.2	.1	-.3	-.3	2.1	7.2	20.2	19.6	13.7	8.7	4.6
22	1.9	.9	.4	-.3	-.4	2.6	7.8	19.9	19.6	13.6	8.5	4.3
23	1.9	.9	.2	-.4	-.5	2.4	8.4	19.4	19.7	13.5	8.2	4.3
24	1.8	.9	.5	-.2	-.6	2.4	8.6	19.1	19.6	13.4	8.1	4.3
25	2.1	.8	.0	-.2	-.8	2.3	9.1	18.9	19.4	13.3	8.2	4.3
26	2.0	.8	.6	-.1	-.6	2.4	9.7	19.0	19.4	13.3	7.9	4.1
27	2.2	.8	.5	.2	-.1	2.2	10.1	19.5	19.1	13.1	7.7	4.1
28	2.3	.8	.4	.1	.5	2.4	10.4	20.0	18.8	12.8	7.5	4.1
29	2.3	.8	.4	.0	-----	2.8	10.3	20.5	18.6	12.5	7.3	3.8
30	2.0	.8	.5	.2	-----	3.0	10.2	20.8	18.2	12.4	7.0	3.7
31	1.9	-----	.5	.4	-----	3.7	-----	20.8	-----	12.3	7.0	-----
1891-92.												
1	3.7	1.9	3.9	2.3	1.1	2.4	6.2	8.0	26.8	27.0	13.9	7.0
2	3.3	1.9	3.7	2.5	1.0	2.4	6.0	8.0	26.0	27.2	13.4	6.9
3	3.3	2.6	3.8	2.8	1.0	2.6	5.9	8.2	25.2	27.0	13.2	6.8
4	3.2	2.8	3.7	2.6	.9	2.5	5.9	8.3	24.8	27.0	13.0	6.6
5	3.1	2.8	3.7	2.8	.8	2.4	5.9	8.4	24.3	26.8	12.5	6.4
6	3.0	2.8	3.6	2.5	.6	2.7	5.8	8.5	23.7	26.6	12.4	6.4
7	2.9	3.3	3.3	2.2	.6	2.7	5.9	8.7	23.4	26.5	12.3	6.3
8	2.7	3.8	4.0	2.0	.4	2.8	5.5	8.7	23.3	26.0	12.0	6.1
9	2.4	3.8	3.8	1.8	-.1	3.0	5.6	9.2	23.7	25.7	11.8	6.0
10	2.5	4.5	3.4	1.7	.5	3.1	5.6	9.7	24.1	25.3	11.6	5.9
11	2.3	4.5	3.0	1.2	.7	3.4	5.7	10.2	24.1	24.7	11.4	5.7
12	2.3	4.7	2.7	.7	.6	4.2	5.8	10.7	23.9	24.0	11.2	5.4
13	2.1	5.4	2.7	.4	.9	4.7	6.8	11.8	24.4	23.3	11.0	5.1
14	1.9	5.1	2.9	.3	1.1	5.3	7.3	13.3	24.5	22.9	10.7	5.0
15	1.9	5.1	2.9	.6	1.5	5.8	7.4	13.4	24.8	22.3	10.4	4.8
16	1.9	5.1	2.6	.8	1.7	6.4	7.5	13.3	25.4	21.7	10.2	4.5
17	1.9	4.2	2.6	1.0	1.6	7.0	7.5	13.4	26.0	21.0	10.2	4.4
18	1.7	3.9	2.7	1.1	1.7	7.3	8.3	13.7	26.6	20.3	9.9	4.4
19	1.6	3.7	2.6	1.2	1.4	7.4	8.3	14.5	27.1	19.7	9.7	4.1
20	1.7	3.5	2.8	1.3	1.2	7.4	8.2	15.2	27.7	19.2	9.7	4.1
21	1.7	3.7	2.8	1.1	1.2	7.5	8.0	16.0	27.9	18.6	9.4	4.1
22	1.6	3.5	2.7	1.3	1.4	7.5	7.8	16.7	28.5	18.1	9.1	4.0
23	1.6	3.4	3.2	1.1	1.6	7.5	7.8	17.5	28.5	17.7	8.7	4.0
24	1.6	3.4	3.1	1.1	1.6	7.7	7.9	19.2	28.0	17.2	8.5	4.0
25	1.7	3.3	2.8	1.0	1.9	7.6	8.2	21.2	27.4	16.7	8.5	4.1
26	1.5	3.6	2.7	.7	2.2	7.5	8.4	22.5	26.8	16.3	8.0	4.1
27	1.6	3.2	3.7	.6	2.4	7.3	8.6	23.4	26.4	15.9	8.0	4.3
28	1.7	3.4	3.5	.6	2.4	6.9	8.5	24.4	26.4	15.3	7.8	4.3
29	1.7	3.5	2.9	.6	2.4	6.7	8.3	25.2	26.6	14.9	7.5	4.3
30	2.0	3.8	2.5	.9	-----	6.4	8.2	25.7	26.7	14.5	7.3	4.2
31	2.0	-----	2.4	1.2	-----	6.3	-----	27.1	-----	14.2	7.2	-----

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sept.
1892-93.												
1.....	4.3	2.8	3.5	2.9	-0.9	0.9	6.3	13.3	26.8	25.1	18.6	8.9
2.....	4.3	2.7	3.3	3.0	-.9	.9	7.9	13.7	26.9	24.6	18.2	8.7
3.....	4.3	2.6	3.3	2.6	-2.0	.7	8.3	13.8	27.1	24.2	18.0	8.6
4.....	4.2	2.6	3.4	2.5	-3.1	.6	8.4	14.1	27.1	23.8	17.6	8.3
5.....	4.4	2.4	3.3	2.4	-3.0	.4	8.2	14.3	27.1	23.8	17.2	7.9
6.....	4.5	2.6	3.4	2.5	-1.6	.3	7.6	14.8	27.1	23.8	16.9	7.7
7.....	4.7	2.3	3.2	2.4	-1.4	.4	8.6	14.8	27.2	23.7	16.7	7.7
8.....	4.9	2.3	3.0	2.2	-1.1	.3	8.9	14.9	27.8	23.4	16.3	7.6
9.....	4.9	2.4	2.8	2.0	-.2	.4	9.5	15.4	28.9	22.8	16.1	7.5
10.....	4.9	2.3	2.8	1.7	.1	.5	9.1	16.9	29.7	22.3	15.9	7.5
11.....	4.8	2.3	2.7	2.1	.5	.4	8.9	18.1	30.2	22.3	15.7	7.4
12.....	5.0	2.1	2.3	1.8	1.0	.6	8.0	19.3	30.3	22.5	15.3	7.3
13.....	4.8	2.4	2.3	1.7	1.5	.7	7.8	20.3	31.1	22.8	15.1	7.3
14.....	4.9	2.1	2.0	1.7	1.5	.6	7.4	20.7	31.4	23.4	14.7	7.3
15.....	5.0	2.6	2.0	1.6	1.5	.5	7.1	21.7	31.0	23.2	14.2	7.3
16.....	4.9	2.6	2.1	1.6	1.3	.5	6.8	22.8	30.1	22.6	13.7	7.1
17.....	4.8	2.6	1.8	1.5	1.5	.5	6.5	24.1	29.3	22.5	13.2	7.1
18.....	4.7	2.7	1.7	1.1	2.0	.5	6.3	25.8	28.7	22.4	12.9	7.0
19.....	4.7	2.5	1.6	.8	2.2	.5	6.3	28.1	28.6	22.3	12.3	6.5
20.....	4.6	2.9	1.4	.2	2.7	.5	6.5	29.1	28.7	22.3	12.1	6.4
21.....	4.5	2.8	.....	.0	1.8	.5	6.7	29.1	28.6	22.2	11.7	6.2
22.....	4.3	3.6	.....	.1	1.9	.6	6.7	28.7	27.9	22.0	11.2	6.2
23.....	4.2	4.9	.....	1.0	1.8	1.2	7.4	28.2	27.2	21.9	11.1	6.0
24.....	4.0	4.9	2.4	1.0	1.6	1.2	8.7	27.7	26.5	21.6	10.6	5.7
25.....	3.8	4.4	2.5	1.2	1.5	1.4	9.5	27.3	26.2	21.3	10.5	5.7
26.....	3.7	4.2	3.0	1.1	1.5	1.6	10.5	27.0	25.8	21.1	10.2	5.3
27.....	3.5	4.2	4.9	.....	1.2	2.0	11.2	26.5	25.4	20.8	9.9	5.2
28.....	3.3	3.9	3.0	.....	1.0	2.3	12.0	26.0	25.4	20.4	9.8	5.1
29.....	3.3	3.8	2.8	.....	.....	3.3	12.6	25.7	25.4	20.1	9.6	4.8
30.....	3.1	3.6	2.9	.2	.....	4.1	12.9	25.8	25.4	19.5	9.4	4.6
31.....	2.8	.....	3.0	.8	.....	5.0	.....	26.3	.....	19.3	9.1	.....
1893-94.												
1.....	4.4	4.0	8.2	5.0	6.3	4.0	16.9	23.4	45.5	31.9	17.9	10.3
2.....	4.1	4.0	9.1	4.9	6.2	4.2	16.1	22.5	46.6	31.6	17.4	10.2
3.....	4.4	4.0	9.3	4.7	5.8	4.3	15.8	21.4	47.9	31.2	16.8	10.2
4.....	4.0	4.3	9.9	4.7	5.6	4.2	15.8	20.6	48.4	30.7	16.4	10.0
5.....	4.3	4.3	9.6	4.4	5.2	4.2	14.8	20.5	49.1	30.4	16.0	9.7
6.....	4.6	4.5	8.9	4.4	4.9	4.1	14.4	19.9	49.6	30.2	15.5	9.6
7.....	4.9	5.4	8.8	4.0	5.1	3.8	14.1	20.3	49.1	29.8	15.2	9.6
8.....	5.9	6.9	8.4	3.8	5.3	3.9	14.0	21.1	49.2	29.5	14.9	9.3
9.....	5.7	8.2	8.1	3.5	5.1	4.1	14.6	21.8	48.8	29.0	14.6	9.1
10.....	5.9	8.3	8.5	3.5	5.1	4.1	14.9	21.8	48.1	28.7	14.3	9.0
11.....	6.6	7.9	9.0	3.6	4.8	4.1	15.1	21.8	47.2	28.4	14.0	8.7
12.....	7.0	7.9	10.0	3.8	4.5	4.6	15.8	21.6	45.9	27.6	13.8	8.5
13.....	6.9	7.8	11.2	5.0	4.4	4.6	16.7	21.4	44.6	27.1	13.5	8.2
14.....	6.2	7.5	10.3	6.3	3.8	5.0	16.7	21.6	43.4	26.5	13.2	8.0
15.....	5.7	7.3	9.4	7.8	3.8	6.0	16.7	22.4	42.2	25.7	12.9	7.7
16.....	5.6	7.4	8.6	9.1	3.7	8.7	16.7	23.9	40.8	25.3	12.6	7.6
17.....	5.5	7.2	8.0	10.5	3.9	10.8	16.4	24.5	40.0	24.8	12.3	7.4
18.....	5.3	7.0	7.6	11.1	3.8	12.9	15.8	25.4	39.3	24.3	12.0	7.3
19.....	5.3	6.9	7.2	10.8	3.6	13.4	15.2	24.9	39.0	23.7	11.8	7.2
20.....	5.4	6.7	7.0	10.0	3.4	12.8	14.6	25.1	38.6	23.3	11.5	7.2
21.....	5.0	6.5	7.2	9.3	3.3	11.8	14.5	26.9	38.5	22.7	11.3	6.8
22.....	5.2	6.4	7.3	8.8	3.3	10.3	14.8	29.0	37.9	22.3	11.2	6.7
23.....	4.8	6.1	7.1	8.2	2.9	8.8	15.8	31.0	37.2	21.8	11.0	6.5
24.....	4.6	6.3	6.8	7.7	2.6	8.0	17.6	32.4	37.0	21.3	11.0	6.4
25.....	4.6	6.3	6.7	7.6	2.5	7.4	19.7	34.1	36.3	21.1	10.9	6.4
26.....	4.6	6.4	6.5	7.4	2.3	7.4	21.1	36.3	35.7	20.6	10.7	6.4
27.....	4.6	6.6	6.2	7.1	2.6	7.8	21.8	38.5	35.2	20.3	10.6	6.2
28.....	4.4	6.6	5.7	7.0	3.6	9.0	23.4	41.0	34.5	19.8	10.6	6.0
29.....	4.2	7.1	5.6	6.8	.....	10.9	24.3	43.3	33.5	19.3	10.5	5.8
30.....	4.0	7.8	5.4	6.7	.....	13.2	24.3	44.4	32.8	18.8	10.4	5.7
31.....	3.9	.....	5.0	6.7	.....	15.2	.....	44.8	.....	18.4	10.3	.....

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891-95.												
1.....	5.6	5.4	5.9	1.8	2.5	5.3	5.9	13.8	21.9	17.8	12.9	6.4
2.....	5.5	5.3	5.8	1.8	2.6	5.1	6.3	14.1	21.0	18.1	12.4	6.3
3.....	5.4	5.6	5.7	2.2	2.6	5.5	6.1	14.6	20.6	18.3	12.2	6.2
4.....	5.4	5.6	5.5	1.7	2.5	5.4	6.3	15.2	20.0	18.4	12.2	6.1
5.....	5.2	5.6	5.3	1.6	2.5	5.3	6.3	16.3	19.7	18.4	12.0	6.0
6.....	5.4	5.8	4.9	1.8	2.7	5.0	6.3	16.9	19.4	18.4	11.7	5.9
7.....	5.5	5.8	4.9	2.0	2.4	4.6	6.3	17.4	19.2	18.7	11.6	5.8
8.....	5.4	5.6	4.8	1.7	2.4	4.5	6.3	17.7	19.6	18.9	11.6	5.7
9.....	5.6	5.4	4.8	1.7	2.3	4.2	6.3	18.0	19.2	18.8	11.4	5.7
10.....	5.8	5.8	4.9	2.0	2.3	4.2	6.3	18.2	18.7	18.5	11.3	5.7
11.....	5.8	6.3	4.8	2.3	2.2	4.1	6.3	18.0	18.5	18.4	11.1	5.8
12.....	5.8	6.5	4.8	3.0	2.1	4.2	6.4	17.8	18.3	18.3	11.0	5.6
13.....	5.7	6.4	4.9	4.8	2.0	4.2	6.6	17.4	18.2	18.0	11.0	5.6
14.....	5.6	5.8	4.3	4.6	1.9	4.2	7.0	17.2	18.3	17.8	11.0	5.5
15.....	5.6	6.0	4.3	4.5	1.6	4.1	7.2	17.3	18.3	17.7	10.5	5.4
16.....	5.6	5.7	4.2	5.3	1.5	4.1	7.7	17.9	18.3	17.6	10.4	5.4
17.....	5.3	5.4	4.0	5.3	1.5	3.8	8.2	18.4	18.2	17.4	10.0	5.4
18.....	5.2	5.4	3.8	4.8	1.9	3.6	8.3	18.6	18.0	17.3	9.7	5.3
19.....	5.1	5.2	3.7	4.7	1.9	3.6	8.6	18.6	17.6	17.1	9.4	5.3
20.....	5.1	5.3	3.6	4.5	2.1	3.5	8.8	18.7	17.4	17.0	9.4	4.9
21.....	4.9	5.2	3.4	4.3	2.3	3.6	9.4	19.2	17.3	16.9	8.8	4.7
22.....	4.9	5.2	3.4	4.1	2.6	3.3	9.4	19.6	16.7	16.3	8.4	4.4
23.....	5.1	5.2	3.3	4.0	3.0	3.4	9.6	20.4	16.6	15.9	8.1	4.2
24.....	5.4	5.4	3.4	4.0	3.5	3.6	9.7	20.6	16.8	15.3	7.7	4.0
25.....	5.5	5.6	3.4	3.9	3.9	3.6	9.9	20.6	16.8	14.9	7.6	3.9
26.....	5.4	5.7	3.3	3.7	4.4	3.5	10.3	20.7	17.1	14.6	7.5	3.9
27.....	5.3	5.5	3.1	3.6	4.9	3.6	11.0	20.6	17.3	14.2	7.3	3.8
28.....	5.4	5.6	3.1	3.2	5.3	3.6	12.2	20.6	17.4	13.8	7.1	3.7
29.....	5.4	5.8	2.9	2.9	.....	4.6	13.0	22.0	17.4	13.5	6.8	3.8
30.....	5.5	5.8	2.2	2.9	.....	5.1	13.6	22.6	17.4	13.3	6.7	3.8
31.....	5.4	.....	2.4	2.5	.....	5.7	.....	22.5	.....	13.1	6.5	.....
1895-96.												
1.....	3.6	1.9	.9	1.2	3.4	6.0	9.6	10.0	23.2	34.2	17.8	8.8
2.....	3.6	1.9	1.1	1.1	3.4	5.7	8.9	10.1	25.4	34.6	17.3	8.7
3.....	3.6	2.0	1.3	.7	3.3	5.2	8.3	10.1	26.8	34.4	16.6	8.8
4.....	3.5	1.8	1.2	.5	3.3	4.7	7.8	10.5	27.6	34.1	16.2	8.7
5.....	3.4	1.7	1.0	.5	3.2	4.4	7.2	10.6	28.4	33.9	15.7	8.8
6.....	3.4	1.7	1.0	.8	3.1	3.9	6.9	11.2	28.8	33.5	15.3	8.7
7.....	3.4	1.5	1.1	.9	2.9	3.9	6.9	11.7	29.2	33.4	15.0	8.5
8.....	3.1	1.5	1.1	1.3	2.6	3.6	7.0	12.5	29.5	33.4	14.6	8.8
9.....	3.1	1.4	.8	1.7	2.3	3.7	7.3	12.6	29.3	33.4	14.2	8.6
10.....	3.2	1.3	1.1	1.6	2.3	3.6	7.6	12.6	29.3	33.0	14.0	8.1
11.....	3.1	1.4	1.2	1.8	2.1	3.5	8.0	12.6	29.8	32.6	13.5	8.0
12.....	3.0	1.3	.9	1.8	1.9	3.4	7.9	12.7	30.2	32.2	13.1	7.8
13.....	3.0	1.3	1.4	1.8	1.8	3.7	8.5	12.6	30.0	32.0	12.7	7.6
14.....	3.0	1.2	1.4	2.0	1.9	3.7	8.8	12.8	29.9	31.5	12.3	7.7
15.....	2.9	1.3	1.3	1.8	1.9	3.7	9.4	13.1	30.4	30.9	12.2	7.8
16.....	2.8	1.3	1.3	1.3	1.9	3.8	10.0	13.1	31.1	30.4	11.7	7.6
17.....	2.8	1.1	1.2	1.3	1.9	3.8	10.0	12.9	31.8	29.9	11.6	7.4
18.....	2.8	1.3	1.2	.5	2.0	3.7	10.0	12.8	32.6	29.1	11.2	7.0
19.....	2.7	1.4	1.2	1.6	1.9	3.8	9.8	12.4	33.4	28.4	11.0	6.5
20.....	2.6	1.2	1.2	2.0	1.9	3.6	9.4	12.4	34.3	27.4	10.7	6.3
21.....	2.6	1.4	.9	3.9	1.8	4.1	8.9	12.5	34.8	26.9	10.6	6.0
22.....	2.6	1.4	.8	4.9	2.0	4.6	8.6	12.5	35.0	26.0	10.2	5.6
23.....	2.6	1.2	.5	4.5	2.0	5.4	8.4	12.6	34.6	25.1	10.0	5.2
24.....	2.6	1.2	.7	4.7	2.2	6.9	8.2	12.9	34.3	24.2	9.7	5.1
25.....	2.6	1.1	.7	4.6	2.6	7.6	8.2	13.9	34.0	23.4	9.8	4.9
26.....	2.6	1.1	.6	4.1	3.9	8.4	8.5	15.2	33.6	22.4	9.5	4.5
27.....	2.5	1.0	.8	3.9	4.1	10.7	8.8	16.6	33.3	21.4	9.6	4.3
28.....	2.3	.9	1.3	3.7	4.4	10.5	9.3	17.3	33.0	20.8	9.5	4.2
29.....	2.3	.9	1.0	3.4	5.0	10.4	9.7	18.4	33.3	20.0	9.3	4.1
30.....	2.0	.9	.8	3.3	.....	10.1	9.9	19.0	33.8	19.2	8.9	3.9
31.....	1.9	.....	.8	3.3	.....	9.9	.....	21.0	.....	18.4	8.8	.....

Daily gage height, in feet, of Columbia River at Cascade Locks, for 1878-1897—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896-97.												
1.....	3.9	1.3	3.6	5.5	3.1	3.0	9.0	22.3	32.8	20.5	12.2	-----
2.....	3.6	1.3	3.4	5.5	3.2	2.8	8.2	21.9	32.5	20.3	11.9	-----
3.....	3.5	1.3	3.3	5.5	3.5	3.0	7.4	21.3	31.8	20.4	11.5	-----
4.....	3.4	1.4	4.9	5.4	3.7	3.0	6.8	21.3	30.9	20.5	11.4	-----
5.....	3.3	1.4	6.4	5.2	4.0	3.3	6.8	21.8	29.8	20.8	11.1	-----
6.....	3.1	1.5	6.4	5.1	4.8	3.4	6.7	22.8	28.8	21.0	11.0	-----
7.....	3.0	1.4	7.5	5.1	5.0	3.4	7.4	24.2	27.9	20.9	10.8	-----
8.....	2.8	2.2	8.4	4.8	5.3	3.3	8.0	26.1	27.3	20.4	10.5	-----
9.....	2.9	2.8	8.0	4.5	5.7	3.1	8.6	26.9	26.9	20.1	10.3	-----
10.....	2.7	2.6	7.7	4.3	5.6	2.9	8.8	26.9	26.7	20.0	10.1	-----
11.....	2.6	2.3	7.8	4.3	5.9	2.9	9.3	26.2	26.1	19.6	9.9	-----
12.....	2.7	2.2	8.5	4.2	6.8	2.7	10.2	25.2	25.4	19.3	9.7	-----
13.....	2.5	2.7	10.0	4.1	5.9	2.7	11.8	24.4	24.6	19.0	9.7	-----
14.....	2.3	4.4	9.5	4.0	5.9	2.5	12.3	24.7	23.6	18.5	9.7	-----
15.....	2.2	6.9	9.7	3.6	6.1	2.2	13.2	25.7	23.0	18.0	9.6	-----
16.....	2.1	6.9	9.6	3.4	6.8	1.9	14.0	27.4	22.6	17.6	9.5	-----
17.....	1.9	6.7	9.6	3.2	6.2	2.3	15.3	29.5	22.0	17.2	9.4	-----
18.....	2.0	8.6	9.0	3.1	5.6	2.2	16.8	31.0	21.9	17.1	9.4	-----
19.....	2.0	9.8	8.7	3.0	5.3	2.1	19.0	32.2	21.5	16.8	9.4	-----
20.....	1.8	9.5	8.3	3.2	5.0	2.2	21.2	32.9	21.3	16.5	9.4	-----
21.....	1.8	8.0	8.0	3.4	4.4	2.2	23.1	33.3	21.0	16.3	9.3	-----
22.....	1.7	7.1	7.5	3.5	4.3	2.2	24.0	34.0	21.1	16.1	9.3	-----
23.....	1.6	6.8	7.1	3.6	3.7	2.2	23.5	34.9	20.9	15.5	9.2	-----
24.....	1.5	6.6	6.9	3.8	3.4	2.6	22.9	34.6	21.1	15.2	9.1	-----
25.....	1.4	6.4	6.7	4.6	3.3	3.2	21.9	34.2	21.1	14.8	9.1	-----
26.....	1.5	6.2	6.5	5.1	3.1	3.7	20.4	34.1	21.0	14.5	9.1	-----
27.....	1.4	5.9	6.3	4.6	3.0	5.3	20.3	34.0	20.9	14.1	9.1	-----
28.....	1.4	5.5	6.1	4.1	3.0	7.2	20.7	33.8	21.0	13.8	9.1	-----
29.....	1.3	4.0	5.9	3.8	-----	9.3	22.3	33.1	20.9	13.5	9.1	-----
30.....	1.3	3.8	5.7	3.3	-----	9.8	22.9	32.7	20.8	13.0	9.0	-----
31.....	1.3	-----	5.8	3.1	-----	9.5	-----	32.5	-----	12.7	9.0	-----

NOTE.—Channel below gage at Cascade Locks occasionally obstructed by ice which was noted by the observer, as follows: 1879, Dec. 23, large cakes of ice running; 1880, Dec. 4-14, river closed to navigation; 1883, Feb. 4-26, river closed to navigation; 1884, river closed with ice Jan. 23 to Feb. 1 and Feb. 8-27, and gage frozen up Dec. 16-18 and 22; river closed with ice above locks Dec. 16, 1884, to Feb. 4, 1885, Jan. 17-29, 1886, and Feb. 4-18, 1887; 1888, ice in river Jan. 6-29, and no boat ran to The Dalles until after Feb. 5; no boat to The Dalles Jan. 17-30, 1889, but no other notes of ice. Extremely cold weather began about Dec. 12, 1889, and lasted until about Feb. 1, 1890, nearly 10 feet of snow falling during this period; river froze over Jan. 2, both gages were frozen up Jan. 4 and no regular readings made until Jan. 17. On Jan. 17 the gage below the locks was read, evidently by chopping away the ice. The river opened and a boat arrived from The Dalles Feb. 3; river frozen again Feb. 25; river blocked with floating ice Dec. 21-23, 1892. Ice notes after 1892 are rather meager.

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879-80.												
1.		3.4	1.6	2.3	3.8	1.4	3.7	16.2	31.7	48.5	35.0	16.1
2.		3.4	1.9	3.2	3.1	1.2	3.5	18.4	32.7	48.5	34.4	15.7
3.		3.4	2.4	3.2	2.8	1.0	3.5	20.1	32.8	48.2	33.4	15.5
4.		3.2	2.5	3.3	3.1	1.0	3.2	22.9	33.4	47.9	32.3	15.2
5.		3.2	3.3	3.2	2.8	1.6	3.0	24.6	33.9	47.6	31.4	14.8
6.		3.4	3.9	3.7	2.3	1.4	3.1	25.5	34.8	46.9	30.3	14.5
7.		3.3	4.0	4.6	2.3	1.4	3.6	26.1	34.8	46.7	29.5	14.3
8.		3.2	4.0	4.6	2.0	1.4	3.9	25.3	34.8	47.1	28.1	13.9
9.		3.4	3.5	3.8	2.0	1.6	4.1	24.3	35.1	47.1	26.9	13.7
10.	6.1	3.5	3.1	3.8	2.1	2.1	4.9	22.9	36.4	46.7	26.7	13.4
11.	5.7	3.6	2.8	3.3	2.1	1.2	6.8	22.1	36.4	46.3	26.2	13.0
12.	5.7	3.6	3.1	2.7	1.9	.8	8.8	21.3	35.7	45.7	25.4	12.6
13.	5.6	3.2	3.4	2.7	1.7	.8	11.0	21.0	35.7	44.7	24.5	12.8
14.	5.5	3.2	3.2	3.4	1.7	.9	11.5	21.5	36.1	42.9	23.9	12.7
15.	5.8	3.5	3.2	3.8	1.9	.9	12.0	22.0	36.7	41.9	23.2	12.5
16.	5.4	3.2	3.4	3.8	1.6	.9	12.0	22.2	39.4	41.2	22.4	12.3
17.	5.2	2.8	3.8	4.1	1.4	.8	11.8	22.8	40.7	41.2	21.7	11.9
18.	5.0	2.7	4.2	4.5	1.4	.8	11.1	23.0	41.5	41.6	20.9	11.5
19.	5.0	2.6	4.1	4.7	1.2	.9	10.5	23.4	42.0	41.8	20.5	11.3
20.	5.1	2.4	3.8	5.4	1.0	.8	9.5	24.7	42.5	41.9	19.9	11.0
21.	4.8	2.2	3.3	5.3	.9	.9	9.0	25.8	42.9	42.1	19.6	10.7
22.	4.3	2.1	2.9	5.3	.7	.7	8.9	27.3	42.5	41.6	19.6	10.4
23.	4.2	2.0	2.5	5.1	.8	.7	9.3	28.9	41.5	41.2	19.3	10.2
24.	4.5	1.9	1.9	5.1	1.0	.9	10.2	30.2	41.3	40.8	18.7	10.1
25.	4.5	2.1	1.7	5.4	1.7	1.4	11.1	30.5	42.2	40.5	18.3	9.9
26.	4.3	1.7	1.3	5.2	1.7	1.9	11.4	29.9	43.6	40.3	17.9	9.5
27.	4.2	1.7	1.5	4.8	1.2	2.8	11.9	29.5	45.9	39.9	17.6	9.2
28.	4.4	1.7	1.4	4.6	1.0	3.6	12.6	28.9	46.9	39.2	17.4	
29.	3.8	1.6	1.3	4.5	1.0	3.8	13.0	29.5	48.0	37.9	17.1	
30.	3.5	1.6	.8	4.4		4.0	14.6	30.5	48.5	37.1	16.7	
31.	3.4		.9	3.8		4.0				36.0	16.4	
1880-81.												
1.		6.2	2.5	2.9	1.9	17.3	17.7	26.9	26.2			
2.		6.2	2.4	3.1	7.5	19.2	19.4	20.4	26.4			
3.		6.0	2.3	3.1	13.0	20.2	21.1	26.1	27.4			
4.		5.7	2.1	3.2	15.7	19.6	23.0	25.6	28.9			
5.		5.7	1.9	3.0	21.7		24.4	25.6	30.9			
6.		5.7	1.9	3.2	22.7	17.2	24.9	25.9	32.8			
7.		5.8	1.7		22.7	17.1	24.9	26.5	33.4			
8.		5.8	1.6	2.3	21.7	15.1	24.9	27.4	33.3			
9.		5.8	1.6	2.1	19.9	14.4	24.9		33.3			
10.		5.9	1.7	1.8	17.2	13.9	24.3	26.7	33.4			
11.		5.9	1.9	2.8	15.1	13.3	23.5	26.1	33.4			
12.	7.9	5.8	2.2	9.8	13.6	12.9	22.2	25.7	33.3			
13.	7.6	5.6	2.4	10.5	12.5	12.6	21.4	25.1	33.3			
14.	7.2	5.4	2.6	11.1	11.1	12.3	20.7	25.1	33.5			
15.	7.0	5.1	2.6	12.0	10.2	12.0	20.3	25.1	33.8			
16.	6.8	4.8		11.1	9.5	11.8	19.9	25.3	34.4			
17.	6.6	4.5		9.5	8.9	11.6	20.2	26.4	34.6			
18.	6.4	4.2		7.0	8.5	11.3	21.1	26.6	34.4			
19.	6.2	4.0		6.6	8.0	10.8	21.9	26.6	33.9			
20.	5.9	3.8		5.9		10.5	23.0	26.4	32.9			
21.	5.7	3.7	2.2	5.1	7.9	10.2	24.2	26.3	32.2			
22.	5.7	3.5	2.0	3.6	9.2	10.5	25.4	26.2	32.2			
23.	5.6	3.3	1.9	3.3	9.5	10.7	26.3	26.8	32.2			
24.	5.6	3.2	1.8	3.0	10.3	10.9	27.8	27.0	32.1			
25.	5.5	3.1	1.8	2.8	11.3		29.7	26.7	31.8			
26.	5.5	3.0	1.8	2.6	11.9	11.5	28.7	26.5	31.8			
27.	5.6	2.9	1.9	2.4	13.9	11.8	28.7	26.2	31.9			
28.	5.8	2.8	2.0	2.2	17.0	12.7	28.7	25.9	31.9			
29.	6.1	2.7	2.2	2.2		14.4	28.4	25.7	32.1			
30.	6.1	2.6		1.7		15.1	27.7	25.9	32.2			
31.	6.2		2.6	1.4		15.9		26.1				

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1892.												
1					0.5	2.7	7.5	9.9	32.8	33.9	17.7	9.3
2					.5	2.8	7.5	10.0	32.0	33.9	17.0	9.1
3					.4	2.9	7.5	10.1	31.1	33.8	16.5	9.0
4					.4	3.3	7.5	10.5	30.6	33.8	16.0	9.0
5					.5	3.3	7.2	10.6	30.0	33.5	15.8	8.9
6					.5	3.3	7.2	10.6	29.5	33.2	15.6	8.9
7					.6	3.5	6.9	10.7	29.1	33.1	15.6	8.7
8					.5	3.4	6.8	11.0	29.0	32.5	15.4	8.7
9					.6	3.5	6.9	11.6	29.8	32.2	15.1	8.7
10					.6	3.5	6.9	12.0	30.2	31.6	14.8	8.6
11					.7	4.4	7.0	12.8	30.3	31.0	14.5	8.5
12					1.0	5.2	7.5	13.6	29.6	30.3	14.0	8.5
13					1.4	5.8	8.4	15.5	30.5	29.5	13.8	8.4
14					1.6	6.4	9.2	16.3	30.8	29.0	13.5	8.3
15					1.8	7.0	9.2	16.4	31.3	28.3	13.0	8.1
16					2.0	7.9	9.2	16.4	31.7	27.8	13.0	8.0
17						8.4	10.3	16.4	32.6	27.3	12.5	8.0
18						8.9	10.3	17.0	33.1	26.7	12.2	7.9
19						9.4	10.3	18.1	33.6	25.0	12.0	7.8
20						9.6	10.1	19.1	34.5	24.2	11.8	7.8
21					1.2	9.6	10.1	20.0	34.5	23.5	11.5	7.9
22					1.5	9.2	9.8	20.7	35.0	23.0	11.2	8.0
23					1.3	9.6	9.6	22.0	35.0	22.5	11.0	8.0
24					1.5	9.6	9.7	24.1	34.4	21.9	10.8	7.9
25					1.6	9.7	10.4	26.5	34.0	21.2	10.8	7.6
26					1.8	9.2	10.7	28.1	33.0	20.5	10.6	7.5
27					2.7	8.8	10.7	29.6	32.9	19.8	10.1	7.5
28					2.7	8.5	10.4	30.3	33.0	19.3	9.8	7.4
29					2.7	8.2	10.1	31.1	33.2	18.7	9.6	7.3
30						7.9	10.0	32.1	33.7	18.4	9.4	7.1
31						7.8		33.2		17.9		
1892-93.												
1	7.1	3.8	4.2	3.6	.0	.5	7.0	16.0	33.2	31.3	23.8	11.0
2	6.9	3.8	4.0	3.5	.0	.3	9.3	16.7	33.3	31.0	23.3	11.0
3	6.8	3.8	4.0	3.2	-1	.2	9.8	17.0	33.4	30.2	22.8	10.6
4	6.5	3.7	4.1	2.9	-2	.1	9.2	17.0	33.4	30.0	22.4	10.3
5	6.2	3.6	4.2	2.9	-3	.0	9.4	17.3	33.3	29.9	22.0	10.0
6	6.2	3.6	4.0	2.6	.5	.0	9.7	18.1	33.5	29.8	21.2	9.7
7	6.0	3.7	3.8	2.4	1.6	.0	9.8	18.1	33.7	29.6	20.7	9.6
8	6.0	3.7	3.5	2.3	2.5	.1	11.0	18.1	34.5	29.2	20.5	9.4
9	6.1	3.6	3.6	2.2	3.0	.2	11.4	18.9	35.7	28.5	20.3	9.3
10	6.0	3.5	3.5	2.1	3.6	.3	11.3	20.5	36.7	28.0	20.1	9.2
11	5.9	3.5	3.4	2.0	4.3	.4	10.4	21.8	37.1	28.0	19.8	9.2
12	5.8	3.6	2.9	1.9	4.7	.3	10.2	23.3	37.2	28.2	19.6	9.4
13	5.6	3.4	2.8	1.8	4.8	.2	9.5	24.5	37.8	28.0	19.2	9.3
14	5.4	3.4	2.5	1.6	4.3	.3	9.3	25.2	38.3	29.5	18.5	9.1
15	5.4	4.0	2.4	1.5	4.0	.3	8.6	26.2	37.9	29.0	17.8	8.9
16	5.2	4.8	2.0	1.5	3.9	.2	8.3	27.7	37.0	28.5	17.0	9.1
17	5.0	4.6	1.9	1.4	3.8	.3	7.9	29.4	36.0	28.3	16.8	9.0
18	4.8	4.0	1.8	1.4	3.7	.2	7.6	31.2	35.4	28.2	16.1	8.1
19	4.7	3.7	1.7	1.3	2.8	.3	7.7	33.8	35.2	28.1	15.8	7.9
20	4.6	3.4	1.6	1.3	2.0	.3	7.4	35.1	35.4	28.0	15.4	7.8
21	4.6	3.6	1.4	1.2	2.0	.3	7.8	35.3	35.3	28.0	14.7	7.6
22	4.5	4.2	1.3	1.1	1.9	.4	8.1	34.9	34.8	27.7	14.2	7.4
23	4.4	6.0	1.1	1.0	2.1	1.2	8.7	34.4	33.7	27.5	13.6	7.2
24	4.4	5.8	1.0	1.4	2.3	1.3	10.1	33.8	33.0	27.3	13.3	7.0
25	4.5	5.2	.8	2.3	2.0	1.4	11.5	33.5	32.5	27.0	13.0	6.9
26	4.6	5.0	1.2	1.9	1.9	1.7	12.8	33.1	32.1	26.9	12.5	7.0
27	4.4	4.7	3.4	1.4	1.8	1.9	13.9	32.6	31.8	26.5	12.2	6.7
28	4.2	4.6	3.5	1.2	1.0	2.7	14.8	32.2	31.8	26.0	12.1	6.4
29	4.1	4.5	3.8	1.1		3.7	15.6	31.8	31.8	25.2	11.9	6.2
30	4.0	4.4	3.5	1.0		4.7	15.8	32.0	31.6	24.6	11.6	6.1
31	3.9		3.6	.9		5.7		32.6		24.3	11.3	

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893-94.												
1	5.9	5.2	9.8	6.1	8.0	5.7	20.4	28.0	53.9	39.9	.....	.....
2	5.7	5.1	10.9	6.2	7.7	5.6	19.8	27.5	55.0	39.5	.....	.....
3	5.6	5.0	11.3	6.4	7.2	6.1	19.0	26.5	56.8	39.2	.....	.....
4	5.5	5.4	12.3	5.8	6.4	6.0	18.9	25.7	57.4	38.5	.....	.....
5	5.4	5.4	11.7	5.7	6.4	6.0	18.5	25.3	58.4	38.3	.....	.....
6	5.6	5.4	11.0	5.4	6.5	6.0	17.5	24.6	59.4	38.1	.....	.....
7	5.5	6.0	10.7	5.0	6.0	5.5	17.2	25.2	58.8	37.7	.....	.....
8	6.6	7.8	10.6	5.0	6.5	5.7	16.9	26.0	58.7	37.5	.....	.....
9	6.7	10.0	10.5	4.7	6.5	5.6	17.8	26.8	58.4	37.0	.....	.....
10	7.0	10.2	11.0	4.6	6.5	5.6	18.6	26.7	57.7	36.0	.....	.....
11	7.5	10.0	10.9	4.5	6.5	5.9	18.0	27.0	56.3	35.5	.....	.....
12	8.5	9.9	13.0	4.5	6.5	5.9	19.2	26.7	55.4	35.0	.....	.....
13	8.6	9.8	13.6	5.1	6.4	5.7	20.5	26.8	54.0	34.5	.....	.....
14	7.6	9.5	13.0	7.5	5.9	6.0	20.6	26.9	52.5	33.8	.....	.....
15	7.2	9.0	11.8	9.2	5.6	7.5	20.8	28.0	51.0	33.2	.....	.....
16	7.2	9.2	10.6	10.9	5.6	10.0	20.9	29.5	49.8	32.6	.....	.....
17	6.8	9.0	9.7	12.5	5.5	13.5	20.4	30.8	48.8	32.0	.....	.....
18	6.6	8.8	9.7	13.7	5.2	16.0	19.5	31.3	48.2	31.2	.....	.....
19	6.4	8.4	9.4	13.3	5.2	15.5	18.5	31.0	48.0	30.8	.....	.....
20	6.6	8.2	9.0	12.3	4.8	15.3	18.0	31.0	47.6	30.0	.....	.....
21	6.5	8.0	8.5	11.3	4.6	14.6	17.8	32.7	47.2	29.4	.....	.....
22	6.4	7.9	8.8	10.9	4.5	12.5	18.0	35.4	46.7	28.8	.....	.....
23	6.3	7.8	8.4	9.9	4.4	10.8	19.6	36.8	45.7	28.1	.....	.....
24	6.0	7.8	8.2	9.5	3.5	9.6	21.5	38.8	45.4	27.6	.....	.....
25	6.0	7.8	8.0	9.1	3.3	9.4	21.3	40.6	44.9	27.0	.....	.....
26	5.8	7.9	7.8	9.3	3.1	9.0	23.6	42.9	44.5	26.5	.....	.....
27	5.6	7.9	7.6	9.0	3.8	9.4	25.3	45.5	43.7	26.0	.....	.....
28	5.3	7.9	7.5	8.8	5.0	10.5	26.4	48.7	42.9	25.5	.....	.....
29	5.1	8.0	7.2	8.5	.....	12.9	28.2	50.5	41.9	25.0	.....	.....
30	5.2	9.0	6.8	8.2	.....	15.8	28.1	52.6	40.9	24.0	.....	.....
31	5.2	.....	6.0	8.0	.....	18.1	.....	53.2	.....	23.5	.....	.....
1894-95.												
1	.....	.....	.....	.....	.....	7.1	8.1	17.9	27.9	23.2	16.5	.....
2	.....	.....	.....	.....	.....	7.6	8.3	18.2	27.1	23.4	16.1	.....
3	.....	.....	.....	.....	.....	7.5	8.3	18.6	26.4	23.6	15.9	.....
4	.....	.....	.....	.....	.....	7.5	8.6	19.4	25.8	23.7	15.7	.....
5	.....	.....	.....	.....	.....	7.1	8.5	20.3	25.1	23.8	15.3	.....
6	.....	.....	.....	.....	.....	6.8	8.4	21.1	24.9	23.9	15.1	.....
7	.....	.....	.....	.....	.....	6.6	8.6	21.9	24.6	24.2	15.1	.....
8	.....	.....	.....	.....	.....	6.3	8.5	22.2	24.7	24.4	15.0	.....
9	.....	.....	.....	.....	.....	6.3	8.5	22.7	24.8	24.3	14.5	.....
10	.....	.....	.....	.....	.....	6.2	8.4	22.9	24.4	24.0	14.4	.....
11	.....	.....	.....	.....	.....	6.3	8.4	22.9	24.1	23.8	14.3	.....
12	.....	.....	.....	.....	.....	6.1	8.6	22.5	23.8	23.7	14.0	.....
13	.....	.....	.....	.....	.....	5.8	9.1	22.4	23.7	23.6	13.9	.....
14	.....	.....	.....	.....	.....	5.8	9.5	22.0	23.7	23.3	13.8	.....
15	.....	.....	.....	.....	.....	6.1	9.7	22.0	23.7	23.2	13.8	.....
16	.....	.....	.....	.....	.....	5.9	10.3	22.6	23.7	23.0	13.5	.....
17	.....	.....	.....	.....	.....	5.4	11.1	23.6	23.7	22.8	13.1	.....
18	.....	.....	.....	.....	.....	5.4	11.2	23.9	23.3	22.5	12.8	.....
19	.....	.....	.....	.....	.....	5.2	11.7	23.9	23.0	22.4	12.5	.....
20	.....	.....	.....	.....	.....	5.0	12.0	24.1	22.4	22.0	12.0	.....
21	.....	.....	.....	.....	.....	4.9	12.1	24.5	21.9	21.6	11.2	.....
22	.....	.....	.....	.....	.....	4.9	12.4	25.0	21.7	21.0	10.9	.....
23	.....	.....	.....	.....	.....	4.8	12.6	26.0	21.6	20.5	10.5	.....
24	.....	.....	.....	.....	.....	4.9	12.8	26.3	21.7	20.2	10.2	.....
25	.....	.....	.....	.....	5.3	5.0	13.2	26.4	21.8	19.5	10.0	.....
26	.....	.....	.....	.....	6.1	5.0	13.7	26.3	22.2	18.8	9.7	.....
27	.....	.....	.....	.....	6.9	5.0	14.9	26.0	22.5	18.2	9.3	.....
28	.....	.....	.....	.....	7.2	5.7	16.1	26.3	22.8	17.7	9.0	.....
29	.....	.....	.....	.....	.....	6.4	17.0	27.8	22.9	17.4	8.7	.....
30	.....	.....	.....	.....	.....	7.0	17.6	28.5	23.0	17.1	8.7	.....
31	.....	.....	.....	.....	.....	7.6	.....	28.7	.....	16.8	8.5	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881
and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.						7.0	12.0	12.7	29.0	42.3	23.3	11.7
2.						6.6	11.1	12.8	31.6	42.6	22.5	11.4
3.						6.4	10.3	12.9	33.2	42.3	21.9	11.4
4.						6.0	9.5	13.2	34.0	42.3	21.2	11.3
5.						5.5	9.2	13.6	34.9	41.9	20.5	11.4
6.						5.3	9.0	14.2	35.5	41.7	19.9	11.5
7.						5.0	8.8	15.2	35.9	41.5	19.5	11.6
8.						4.9	9.0	15.8	36.3	41.5	19.2	11.3
9.					3.0	4.8	9.2	16.1	36.1	41.4	18.7	10.9
10.					3.0	4.6	10.0	15.9	36.1	41.1	18.1	10.8
11.						4.6	10.2	16.0	36.6	40.8	17.4	10.7
12.						4.6	10.2	16.1	37.2	40.6	17.0	10.5
13.						4.6	10.6	16.1	37.2	40.0	16.6	10.2
14.					2.8	4.8	11.1	16.4	37.0	39.4	16.4	9.9
15.						5.0	11.7	16.7	37.6	39.0	16.0	10.0
16.						5.0	12.7	16.6	38.3	38.4	15.7	9.8
17.						4.9	12.8	16.5	39.3	37.7	15.1	9.3
18.						4.8	12.8	16.2	40.1	36.8	14.6	9.0
19.					2.3	4.9	12.4	15.9	40.9	36.0	14.2	8.5
20.					2.4	5.2	11.9	15.8	41.7	35.1	14.0	8.1
21.					2.5	6.0	11.4	15.8	42.4	34.2	13.7	.....
22.					2.7	6.7	11.0	16.0	42.9	33.2	13.2	.....
23.					2.7	8.1	10.6	16.1	42.6	32.4	12.9	.....
24.					2.8	9.5	10.5	16.6	42.0	31.4	13.0	.....
25.					3.1	11.0	10.7	17.8	41.6	30.5	12.7	6.6
26.					4.2	12.7	10.9	19.2	41.3	29.5	12.6	6.1
27.					4.7	13.2	11.2	21.1	41.1	28.4	12.6	5.6
28.					5.7	13.0	11.9	22.2	40.9	27.3	12.0	5.6
29.					6.4	12.8	12.3	23.4	41.4	26.1	11.8	.....
30.							12.5	24.5	41.8	25.1	11.7	.....
31.						12.8	.....	26.2	.....	24.1	11.7	.....
1896-97.												
1.	5.5					2.8	7.0	28.5	40.9	27.0	16.2	11.5
2.							7.4	27.8	40.8	26.9	15.7	11.1
3.							7.8	27.4	39.8	26.8	15.1	10.8
4.							8.1	27.3	38.7	26.8	14.9	10.4
5.							8.5	27.6	37.5	27.2	14.7	10.2
6.							9.0	28.8	36.6	27.5	14.1	10.0
7.							9.5	30.6	35.9	27.4	14.0	9.8
8.						4.0	10.0	32.8	35.2	27.0	13.9	9.6
9.			9.0				10.5	33.8	34.6	26.6	13.5	9.4
10.			9.5				11.3	33.8	34.1	26.1	13.3	9.2
11.			10.5				12.3	33.0	33.9	26.0	13.0	8.8
12.		4.4	11.0				13.2	31.9	32.9	25.8	13.0	8.4
13.		5.0	12.0				14.7	31.2	31.8	25.3	12.7	8.1
14.		5.8					15.5	31.4	30.9	24.5	12.6	7.8
15.		6.9					16.2	32.6	30.5	24.2	12.5	7.3
16.		7.8					17.4	34.7	30.0	23.5	12.4	6.7
17.		8.8					18.7	36.6	29.6	23.1	12.6	6.4
18.		10.8					20.8	38.1	28.7	22.6	12.5	6.3
19.		11.9					23.4	39.5	27.9	22.2	12.5	6.2
20.		10.9					25.7	40.6	27.6	22.0	12.4	6.0
21.		10.2					28.4	40.7	27.5	21.8	12.3	5.9
22.		9.6					30.0	41.5	27.2	21.2	12.2	5.8
23.		9.0					29.6	42.5	27.2	20.5	12.2	5.6
24.		8.5					28.9	42.7	27.4	20.0	12.1	5.5
25.		8.1					27.3	42.3	27.7	19.5	12.0	5.2
26.		8.2					26.2	42.0	27.9	18.9	11.9	5.0
27.		8.3					25.7	41.7	27.7	18.6	12.1	4.8
28.							26.3	41.7	27.7	18.3	12.2	4.7
29.							28.2	41.1	27.4	17.7	12.0	4.6
30.							28.9	40.6	27.3	17.3	12.1	4.5
31.							.....	40.5	.....	16.7	11.8	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1.....	4.4	2.7	7.8	2.0	2.6	8.9	5.3	21.1	34.8	31.9	18.5	12.3
2.....	4.3	2.7	7.5	8.9	2.5	8.9	5.3	21.1	34.9	31.1	18.0	12.1
3.....	4.4	2.6	7.3	8.6	2.7	9.1	5.4	21.0	34.5	30.8	17.8	11.8
4.....	4.4	2.5	7.3	7.8	2.7	9.3	5.5	20.8	34.0	30.0	17.2	11.5
5.....	4.5	2.4	7.7	7.4	2.8	9.2	5.8	21.1	33.4	29.2	16.6	11.1
6.....	4.6	2.5	7.8	7.3	3.6	9.5	6.0	21.5	32.9	28.6	16.3	10.5
7.....	4.7	2.6	8.5	7.2	4.6	9.7	6.3	21.8	32.5	27.7	16.2	10.2
8.....	4.8	2.7	8.8	6.9	4.3	9.9	6.9	22.0	32.4	27.2	16.1	9.8
9.....	4.9	2.8	8.8	6.8	4.6	9.9	7.7	22.1	32.7	26.8	15.9	9.5
10.....	4.7	2.8	8.9	6.6	5.3	10.6	8.1	22.1	32.2	26.2	15.6	8.8
11.....	4.7	2.9	9.6	6.2	6.2	11.0	8.5	22.1	34.1	25.9	15.6	8.3
12.....	4.6	3.4	9.8	5.8	6.7	10.6	8.9	22.4	34.8	25.5	15.4	8.1
13.....	4.5	3.7	9.5	5.5	6.9	10.1	9.6	23.0	35.3	25.0	15.3	8.0
14.....	4.4	4.0	10.0	5.0	7.5	9.7	9.9	24.1	35.9	24.4	15.2	7.6
15.....	4.2	5.0	9.8	5.0	8.3	9.3	10.9	24.8	36.2	24.0	15.3	7.3
16.....	4.1	5.6	8.7	5.0	10.6	8.9	12.6	25.4	36.5	23.6	15.0	7.0
17.....	4.0	5.7	8.6	4.9	14.0	8.5	13.4	26.1	36.8	23.5	15.0	6.8
18.....	3.9	6.2	8.5	4.8	16.5	8.3	15.2	27.0	36.8	23.3	14.8	6.7
19.....	3.9	6.8	8.0	4.9	15.5	8.4	15.7	28.3	36.8	23.3	14.6	6.5
20.....	3.8	6.4	7.6	5.1	14.0	8.4	16.0	29.0	36.9	23.2	14.4	6.3
21.....	3.7	6.7	7.0	4.8	12.8	7.7	15.8	29.5	36.9	23.1	14.3	6.2
22.....	3.7	8.5	6.8	4.6	11.7	7.3	15.8	29.5	36.8	22.9	14.0	6.2
23.....	3.6	9.8	6.4	4.5	10.9	7.1	16.2	29.0	36.3	22.6	13.6	6.0
24.....	3.5	9.7	6.0	4.1	10.5	6.8	16.6	28.5	35.6	22.0	13.3	5.8
25.....	3.4	9.0	6.0	3.9	10.0	6.3	17.3	28.4	35.2	22.0	13.0	5.8
26.....	3.3	8.8	5.9	3.8	9.8	6.3	17.9	28.6	34.6	21.5	13.0	5.8
27.....	3.2	8.7	6.1	3.5	9.0	6.3	18.3	28.7	34.5	20.7	12.7	5.9
28.....	3.1	8.5	6.8	3.1	9.1	6.3	20.3	29.3	34.1	20.3	12.5	6.0
29.....	3.0	8.2	7.1	3.0	.....	6.0	21.3	31.2	33.3	19.8	12.6	5.9
30.....	2.9	8.0	7.2	2.9	.....	5.8	21.3	33.5	32.7	19.5	12.6	6.0
31.....	2.8	.....	8.0	2.7	.....	5.5	.....	34.4	.....	19.1	12.5	.....
1898-99.												
1.....	5.6	2.7	2.7	3.0	5.9	5.5	6.4	14.0	28.5	40.3	26.7	14.5
2.....	5.5	2.7	2.5	2.6	5.8	5.3	6.2	13.6	28.8	40.4	26.0	14.1
3.....	5.4	2.8	2.2	2.0	5.4	5.0	6.1	13.1	29.1	40.4	25.3	13.7
4.....	5.4	2.9	1.9	1.8	5.9	4.9	6.3	12.9	30.5	40.0	24.5	13.3
5.....	5.2	2.9	1.9	1.6	5.5	4.7	6.5	12.7	31.8	39.7	24.0	13.0
6.....	5.0	2.9	1.6	1.5	3.8	4.3	7.1	12.5	33.5	39.4	23.3	12.7
7.....	4.8	2.8	1.3	1.4	3.4	4.4	7.3	12.4	34.0	39.0	22.8	12.6
8.....	4.6	2.9	.9	1.2	2.4	4.3	7.5	12.9	33.6	38.5	22.1	12.3
9.....	4.6	2.8	.7	1.1	2.2	4.7	8.2	14.4	32.7	38.2	21.4	12.2
10.....	4.4	2.7	.4	1.1	3.9	4.5	8.7	16.1	32.1	38.1	21.0	12.2
11.....	4.3	2.6	.1	1.2	4.6	4.7	9.8	18.3	32.5	37.9	20.4	12.1
12.....	4.2	2.4	.0	1.4	4.4	4.9	11.2	20.7	33.5	37.7	19.9	12.0
13.....	4.1	2.1	-.5	2.0	4.7	5.0	11.8	21.5	36.0	37.3	19.9	12.0
14.....	4.0	2.0	-.5	2.7	5.1	4.7	13.6	22.0	37.8	36.8	19.4	11.9
15.....	4.0	2.0	-.6	2.8	6.0	4.3	15.3	21.9	37.3	36.4	19.0	11.7
16.....	3.9	2.1	-.7	3.2	5.9	4.1	14.6	21.2	36.3	36.1	18.5	11.5
17.....	3.6	2.2	-.8	3.5	5.9	3.9	14.1	20.4	35.8	35.7	18.1	11.5
18.....	3.8	2.5	-.8	3.6	5.8	3.8	14.4	20.1	36.4	35.3	17.9	11.5
19.....	3.7	2.5	.0	3.8	5.9	3.7	14.5	20.0	38.5	34.7	17.6	11.4
20.....	3.6	2.6	1.5	4.0	6.5	3.9	14.2	20.0	40.9	34.3	17.1	11.4
21.....	3.5	2.7	1.1	5.8	6.0	4.2	14.4	19.8	42.4	33.9	16.9	11.7
22.....	3.4	2.7	1.0	6.8	6.5	4.4	13.9	19.8	43.0	33.3	16.8	11.5
23.....	3.5	3.0	.6	6.2	7.0	4.9	13.8	19.9	42.2	32.7	16.5	11.3
24.....	3.3	2.8	.4	7.5	6.1	5.0	14.0	20.0	41.0	32.3	16.2	11.3
25.....	3.2	2.5	.3	8.0	5.8	5.0	14.0	21.0	39.9	31.5	16.1	10.9
26.....	3.0	2.3	.3	7.5	5.0	5.2	14.1	23.0	39.6	30.5	16.0	10.7
27.....	3.2	2.3	.3	6.8	4.8	5.5	14.5	25.4	40.2	29.8	15.7	10.6
28.....	3.1	2.5	.8	7.0	4.4	5.9	15.5	26.8	40.9	29.1	15.3	10.4
29.....	2.8	2.6	.7	7.0	.....	6.5	15.5	27.5	41.0	28.6	15.1	10.2
30.....	2.8	2.9	.2	7.1	.....	6.7	15.0	27.8	40.6	27.9	14.9	10.0
31.....	2.9	.....	2.3	6.9	.....	6.6	.....	28.4	.....	27.3	14.6	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890-1900.												
1.....	10.0	6.3	10.3	8.1	7.7	7.5	13.5	18.5	26.5	26.8	15.1	9.2
2.....	9.8	6.2	11.8	8.1	7.7	7.3	13.5	18.7	26.1	26.8	15.0	9.1
3.....	9.5	6.2	11.9	8.0	7.6	7.2	13.6	19.1	25.6	26.7	14.9	9.1
4.....	9.2	6.1	11.8	8.1	7.3	7.3	14.0	20.0	25.5	26.3	14.6	9.0
5.....	9.0	6.2	11.6	8.0	7.0	7.3	14.6	21.2	25.4	26.0	14.3	8.8
6.....	8.9	6.0	11.2	7.9	6.9	7.4	15.5	22.6	25.5	25.7	14.2	8.5
7.....	8.7	5.8	10.5	8.0	6.8	7.7	16.3	23.9	25.8	25.1	13.8	8.4
8.....	8.6	5.4	10.3	8.1	6.6	8.6	16.7	25.2	25.8	24.4	13.7	8.2
9.....	8.2	5.5	10.1	8.1	6.6	8.7	17.2	26.0	25.9	23.7	13.5	8.1
10.....	8.0	5.6	10.0	8.2	6.5	9.0	17.8	26.8	25.8	23.0	13.0	8.0
11.....	7.8	5.7	10.0	8.3	6.5	10.0	18.0	27.2	25.7	22.2	12.4	7.8
12.....	7.5	5.7	9.9	8.6	6.4	10.6	18.1	28.5	25.3	21.5	12.1	7.6
13.....	7.5	5.7	9.6	9.8	6.3	10.8	17.6	29.5	24.9	21.0	11.8	7.4
14.....	7.4	5.8	9.0	10.0	6.1	11.3	17.5	31.0	24.8	20.4	11.3	7.3
15.....	7.3	5.9	8.6	14.5	5.9	12.0	17.0	31.7	24.3	19.9	10.9	7.2
16.....	7.1	6.0	8.4	15.9	5.7	12.7	17.7	31.4	24.0	19.2	10.6	7.1
17.....	7.0	6.3	8.2	14.0	5.5	13.0	18.0	30.8	23.9	19.2	10.3	7.0
18.....	7.0	6.5	8.0	13.2	5.4	13.1	18.1	31.0	23.8	18.7	10.0	6.9
19.....	6.8	6.8	7.8	12.8	5.2	13.1	18.2	32.2	25.3	18.2	9.6	6.7
20.....	6.9	7.0	7.5	12.4	5.0	13.3	18.1	31.9	25.0	17.7	9.5	6.7
21.....	7.0	7.7	7.5	11.8	4.6	13.1	18.5	31.3	24.5	17.3	9.3	6.9
22.....	7.4	8.0	7.5	11.5	6.0	13.4	18.8	30.8	24.3	17.0	9.3	6.9
23.....	7.8	8.4	7.2	11.0	6.0	13.6	19.3	30.2	24.6	16.8	9.3	6.8
24.....	7.9	8.5	7.5	10.7	7.0	13.8	19.3	30.0	25.3	16.6	9.2	6.6
25.....	7.8	8.5	7.8	10.3	8.0	14.0	19.2	29.3	25.5	16.2	8.9	6.3
26.....	7.5	8.6	8.2	9.8	7.9	14.1	19.0	29.0	25.8	15.8	8.8	6.1
27.....	7.4	8.6	8.4	9.5	7.8	14.1	18.7	28.5	26.3	15.6	9.0	6.2
28.....	7.1	9.3	8.2	9.1	7.7	14.3	18.5	27.7	26.8	15.4	9.1	6.4
29.....	6.9	9.6	8.0	8.5	-----	14.5	18.3	27.6	27.0	15.2	9.3	6.5
30.....	6.8	9.9	7.8	8.0	-----	14.2	18.3	27.5	27.0	15.2	9.3	6.5
31.....	6.6	-----	7.7	7.7	-----	13.8	-----	27.3	-----	15.1	9.2	-----
1900-1901.												
1.....	6.3	7.8	5.5	7.9	5.0	14.3	8.5	12.7	37.5	25.5	17.9	9.8
2.....	6.1	8.0	5.4	7.4	4.8	15.5	8.3	13.6	37.1	24.9	17.7	9.7
3.....	6.0	8.0	5.3	7.0	4.6	16.6	7.9	14.6	36.8	24.3	17.2	9.5
4.....	5.9	7.7	5.4	6.5	4.4	17.1	7.8	16.0	36.7	23.7	16.8	9.5
5.....	5.8	7.6	5.7	6.2	3.8	16.6	7.9	17.8	36.8	23.0	16.7	9.4
6.....	5.7	7.8	5.8	6.1	3.7	15.3	7.6	18.6	36.6	22.9	16.5	9.1
7.....	5.5	7.8	6.4	6.0	3.6	14.3	7.6	19.5	36.0	22.9	16.2	8.9
8.....	5.4	7.6	7.4	6.1	3.5	13.6	7.8	20.0	35.1	22.8	16.0	8.8
9.....	5.5	7.4	7.8	5.8	3.4	12.5	7.8	20.8	34.1	22.7	15.8	8.7
10.....	5.6	7.1	7.8	5.2	3.0	12.0	7.7	20.4	33.5	22.7	15.4	8.6
11.....	5.3	6.9	7.7	5.2	2.7	11.7	7.7	22.1	32.7	22.6	15.0	8.5
12.....	5.0	6.7	7.3	5.1	2.3	11.5	7.9	23.2	31.7	22.5	14.7	8.4
13.....	4.9	6.6	7.0	8.4	2.3	11.1	8.0	23.5	31.2	22.5	14.2	8.1
14.....	4.8	6.5	6.9	9.4	2.5	10.6	8.4	24.5	29.9	22.3	13.8	7.9
15.....	4.8	6.4	6.9	9.4	2.7	10.3	9.2	26.1	29.2	21.9	13.6	7.5
16.....	4.6	6.2	6.8	9.2	6.1	9.9	9.7	27.4	28.5	21.9	13.4	6.9
17.....	4.4	6.2	6.8	9.1	7.5	9.7	10.3	28.9	27.9	21.8	13.0	6.6
18.....	4.3	6.1	6.7	9.0	8.5	9.3	10.3	30.5	27.3	21.5	13.0	6.5
19.....	4.2	5.9	6.9	8.6	10.0	9.1	10.3	32.1	27.0	21.0	12.8	6.2
20.....	4.2	6.0	7.2	8.2	9.6	9.1	10.4	32.9	26.8	20.7	12.4	6.1
21.....	4.3	6.4	8.7	7.3	8.7	9.2	10.5	33.1	26.8	20.5	12.0	5.8
22.....	4.8	6.2	8.6	7.0	8.4	9.3	10.8	32.2	27.2	19.9	11.7	5.5
23.....	5.3	6.0	9.2	6.6	8.0	9.1	11.4	31.3	27.2	19.8	11.8	5.1
24.....	5.7	5.5	10.9	6.3	8.1	9.1	11.9	30.9	27.2	19.7	11.8	5.0
25.....	6.3	5.4	10.8	6.4	9.4	9.5	12.3	30.1	27.1	19.6	11.4	4.9
26.....	6.5	5.4	10.2	6.4	9.8	9.6	12.7	29.8	26.8	19.3	11.2	4.9
27.....	6.8	5.2	9.8	6.1	11.7	9.5	13.0	30.9	26.3	19.0	10.8	4.8
28.....	7.1	4.9	9.2	5.9	12.8	9.4	13.1	32.4	25.9	18.4	10.4	4.8
29.....	7.3	5.0	9.2	5.6	-----	9.2	12.9	34.1	25.5	18.3	10.1	4.5
30.....	7.5	5.5	8.7	5.4	-----	9.1	12.8	35.7	25.1	18.4	10.0	4.2
31.....	7.6	-----	8.2	5.2	-----	8.8	-----	36.8	-----	18.2	9.9	-----

Daily gage height, in feet, of Columbia River at The Dalles, Ore., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901-2.												
1.....	4.2	1.9	3.2	3.2	0.6	7.9	3.2	10.7	36.7	26.2	20.0	10.2
2.....	4.0	1.8	3.3	3.2	.2	7.6	3.2	11.0	36.3	26.0	19.7	10.0
3.....	4.4	2.0	3.5	3.0	- .3	7.3	3.1	11.0	36.0	26.2	19.2	9.7
4.....	4.3	2.3	4.1	2.9	- .8	6.6	3.2	10.9	35.4	26.5	18.7	9.2
5.....	4.2	2.5	4.4	2.8	1.0	6.2	3.5	10.9	34.7	27.0	18.3	8.8
6.....	3.8	2.5	4.5	3.2	2.2	5.9	3.9	11.1	34.0	27.6	17.5	8.6
7.....	3.6	2.4	4.5	3.5	2.2	5.7	5.0	11.4	33.3	29.1	17.1	8.4
8.....	3.5	2.3	4.7	4.1	1.9	5.5	5.6	11.8	32.9	29.0	16.8	7.8
9.....	3.5	2.3	4.9	4.3	1.8	5.4	6.3	12.6	32.8	28.0	16.3	7.5
10.....	3.3	2.8	4.5	4.4	1.8	5.5	7.3	14.0	32.7	28.3	15.7	7.3
11.....	3.2	2.7	4.2	4.5	2.1	5.5	8.0	16.0	33.3	27.9	15.4	6.9
12.....	3.0	2.5	4.0	4.5	3.0	5.4	8.5	17.6	34.5	27.8	15.2	6.5
13.....	2.9	2.4	4.0	4.4	3.9	5.2	8.5	19.3	34.8	27.2	14.7	6.4
14.....	2.8	2.3	3.8	4.3	6.5	5.2	8.0	20.5	34.3	26.8	14.3	6.5
15.....	2.7	2.1	3.5	3.8	6.2	5.5	7.6	21.4	33.6	26.5	14.0	6.4
16.....	2.5	2.4	2.6	3.7	6.5	5.2	7.4	22.0	32.9	25.9	13.8	6.1
17.....	2.5	2.5	2.3	3.6	6.8	5.0	7.4	24.5	32.0	25.4	13.6	5.9
18.....	2.5	2.4	2.3	3.4	6.7	4.9	7.5	25.7	31.3	25.0	13.4	5.7
19.....	2.4	2.2	2.0	3.3	6.7	4.7	8.2	27.0	30.7	24.5	13.2	5.7
20.....	2.3	2.4	1.9	3.2	6.7	4.6	9.1	27.3	29.8	24.2	13.1	5.6
21.....	2.2	2.4	1.9	3.1	7.8	4.5	10.3	27.1	28.7	24.0	12.9	5.5
22.....	2.0	2.6	1.9	3.1	6.9	4.5	11.4	27.4	28.6	23.6	12.7	5.2
23.....	1.9	3.6	2.5	2.8	6.4	4.6	11.8	28.5	28.3	23.2	12.4	5.0
24.....	1.9	3.1	2.5	2.5	5.9	4.8	11.9	28.8	27.9	22.9	12.1	4.9
25.....	1.9	2.9	2.4	2.0	5.9	4.8	11.8	29.1	27.8	22.3	11.9	4.7
26.....	1.8	3.5	2.5	1.8	5.9	4.6	11.7	29.8	27.8	22.0	11.6	4.6
27.....	1.9	3.6	5.0	1.4	5.6	4.5	11.2	30.5	27.7	21.7	11.3	4.5
28.....	1.8	3.7	5.6	1.2	6.4	4.3	11.0	31.3	27.3	21.4	11.0	4.4
29.....	1.8	3.0	5.0	1.2	.....	4.0	10.7	32.8	26.9	21.2	10.8	4.3
30.....	1.9	3.0	3.6	1.1	.....	3.7	10.7	35.0	26.5	20.9	10.7	4.2
31.....	1.8	.....	3.4	1.0	.....	3.4	.....	36.3	.....	20.5	10.6	.....
1902-3.												
1.....	3.8	1.7	3.4	3.7	6.6	1.9	13.2	16.0	24.0	36.6	18.2	10.3
2.....	3.7	1.8	3.1	3.5	6.5	1.9	14.0	15.5	25.9	35.9	17.9	10.0
3.....	3.5	1.9	3.0	4.5	6.3	1.8	14.2	15.2	28.8	34.8	17.4	9.7
4.....	3.4	1.8	3.0	5.5	5.4	1.8	13.7	15.2	32.4	33.6	17.0	9.6
5.....	3.4	1.7	3.1	5.5	4.3	1.7	13.2	15.2	35.1	32.8	16.5	10.0
6.....	3.3	1.6	3.5	6.4	3.7	1.6	12.4	15.9	36.2	32.0	16.1	9.9
7.....	3.2	1.7	3.4	7.4	3.3	1.7	11.7	16.6	36.6	31.1	15.8	9.7
8.....	3.2	2.2	3.1	7.8	3.2	1.8	11.2	17.7	37.1	30.2	15.5	9.5
9.....	3.1	2.0	3.0	7.3	3.0	1.7	10.6	18.6	37.8	29.6	15.1	9.1
10.....	3.0	2.5	3.0	6.5	3.7	1.6	10.3	18.9	39.1	29.4	14.7	9.3
11.....	2.7	3.0	3.1	5.8	3.5	2.1	10.2	18.7	40.5	28.9	14.3	9.2
12.....	2.7	3.5	3.5	5.3	3.3	1.9	10.1	18.7	41.3	28.0	13.9	9.1
13.....	2.7	3.5	3.9	4.7	3.0	1.5	10.1	18.4	41.7	27.2	13.7	9.0
14.....	2.6	3.4	3.7	4.2	2.8	1.9	10.0	18.4	42.4	26.4	13.2	9.0
15.....	2.6	3.3	3.4	4.1	2.5	2.6	9.8	19.3	42.7	25.5	13.0	8.8
16.....	2.5	3.2	3.2	3.8	2.0	3.6	9.5	21.3	42.9	24.9	12.6	8.6
17.....	2.5	3.5	3.0	3.5	1.9	4.7	9.5	22.5	42.9	24.2	12.3	8.4
18.....	2.4	3.6	2.6	3.1	1.6	5.2	9.4	23.1	43.0	23.9	12.3	8.2
19.....	2.2	3.4	2.1	3.0	1.6	5.2	9.4	22.9	43.0	23.3	12.2	8.1
20.....	2.2	3.2	1.9	2.8	1.4	5.1	9.6	22.3	42.6	22.7	12.1	7.9
21.....	2.1	3.1	1.7	3.2	1.4	4.8	10.0	21.9	41.9	22.4	11.8	7.4
22.....	2.0	3.0	1.4	3.5	1.4	4.2	10.3	21.5	41.4	21.9	11.7	7.2
23.....	2.0	2.9	1.2	3.5	1.5	3.9	10.8	21.2	41.0	21.3	11.6	7.0
24.....	1.9	3.0	1.2	4.3	1.6	3.9	11.3	20.9	40.4	21.0	11.3	7.0
25.....	1.9	2.8	1.4	8.6	1.6	4.3	12.2	20.5	40.0	20.2	11.2	7.0
26.....	1.9	2.5	1.6	8.5	1.6	4.5	13.0	20.3	39.2	19.9	11.1	7.0
27.....	1.9	2.6	2.2	10.0	1.7	5.1	13.9	20.4	38.5	19.5	10.9	7.0
28.....	1.9	2.7	2.0	10.8	1.6	6.4	14.9	20.6	37.7	19.2	10.8	7.3
29.....	1.8	2.8	2.5	9.8	.....	8.9	15.5	21.7	37.2	19.0	10.8	7.7
30.....	1.8	3.1	3.0	8.6	.....	9.4	16.0	22.7	36.7	19.0	10.8	7.6
31.....	1.7	.....	3.3	7.6	.....	11.8	.....	23.4	.....	18.5	10.5	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	7.9	7.4	7.3	4.5	3.1	8.6	9.7	29.5	33.9	28.3	16.1	8.1
2.....	8.0	7.3	7.2	4.4	3.0	7.5	10.7	29.6	34.3	28.1	15.9	8.0
3.....	8.5	7.2	7.2	4.3	3.0	6.6	11.3	29.2	34.5	28.0	15.7	7.7
4.....	8.9	7.0	7.1	4.2	2.9	6.3	11.1	28.8	34.8	28.3	15.3	7.6
5.....	9.2	6.9	7.2	4.1	2.8	6.0	11.9	28.6	34.8	28.1	14.9	7.5
6.....	9.5	7.5	7.3	4.1	2.7	6.1	12.1	28.6	34.1	28.0	14.7	7.3
7.....	9.9	7.6	7.4	4.0	2.6	7.7	12.3	28.6	33.9	27.8	14.5	7.1
8.....	9.9	7.4	7.1	3.8	2.5	8.0	13.2	28.5	34.1	27.9	14.3	7.1
9.....	10.0	7.4	6.6	3.8	2.4	9.6	13.1	28.2	34.8	27.6	14.1	7.1
10.....	10.2	7.6	6.5	4.0	2.3	12.9	13.3	27.9	34.6	27.9	13.8	6.9
11.....	10.4	8.0	6.5	4.3	2.2	15.7	14.0	27.2	34.3	27.7	13.7	6.8
12.....	10.2	7.7	6.4	4.4	2.2	15.4	15.4	27.2	33.8	27.8	13.3	6.6
13.....	10.0	7.6	6.4	4.5	2.3	14.5	17.9	27.7	33.1	27.8	13.0	6.5
14.....	10.1	7.4	6.2	4.6	2.4	13.3	20.0	27.8	32.6	27.0	12.9	6.5
15.....	9.9	7.4	6.1	4.7	2.4	12.1	22.6	28.2	32.3	26.7	12.8	6.6
16.....	9.7	7.3	6.4	4.7	2.6	11.0	24.8	28.3	31.8	26.3	12.5	6.6
17.....	9.6	7.1	6.3	4.9	2.8	10.5	27.3	28.6	31.8	25.9	12.2	6.5
18.....	9.6	7.0	6.4	5.1	3.5	10.4	28.1	28.8	32.4	25.6	11.9	6.5
19.....	9.4	6.9	6.5	5.0	3.9	10.1	28.9	29.2	33.1	24.8	11.7	6.4
20.....	9.0	6.7	6.4	5.0	4.5	10.5	28.3	29.6	33.3	23.9	11.4	6.1
21.....	8.7	6.6	6.3	4.9	5.3	10.5	28.0	30.0	33.4	23.2	10.9	5.9
22.....	8.6	6.5	6.2	4.9	5.4	10.6	28.2	30.4	33.1	22.8	10.7	5.6
23.....	8.5	6.4	6.1	4.7	5.4	11.1	28.1	32.0	32.8	21.8	10.6	5.4
24.....	8.4	7.2	6.0	4.3	6.3	10.3	28.1	34.2	32.2	20.9	10.2	5.3
25.....	8.1	7.9	5.9	4.1	6.3	10.2	27.5	35.1	31.6	20.0	10.3	5.0
26.....	7.8	7.8	5.9	3.8	7.6	9.3	26.5	36.0	31.0	19.6	9.8	5.0
27.....	7.8	7.6	5.4	3.6	9.4	8.4	25.8	35.6	30.1	18.8	9.7	5.0
28.....	7.9	7.5	5.0	3.4	9.8	8.0	25.8	34.8	29.3	18.2	9.4	4.7
29.....	7.7	7.3	4.6	3.2	9.3	7.8	27.3	34.0	28.6	17.5	9.1	4.4
30.....	7.4	7.2	4.4	3.3	.....	9.2	28.6	33.5	28.3	17.0	8.8	4.1
31.....	7.4	.....	4.6	3.3	.....	9.4	.....	33.5	.....	16.6	8.4	.....
1904-5.												
1.....	3.9	1.5	1.7	1.1	1.2	2.0	6.4	11.0	17.1	19.8	12.7	6.2
2.....	3.9	1.5	2.0	1.2	1.0	2.3	6.3	10.7	18.0	19.3	12.6	6.0
3.....	3.8	1.4	1.6	1.3	.8	2.5	6.1	10.7	18.9	18.8	12.6	5.8
4.....	3.5	1.2	1.3	1.6	.5	2.7	5.8	10.5	20.0	18.4	12.6	5.5
5.....	3.1	1.1	1.2	1.1	.3	3.0	5.9	10.5	21.1	18.1	12.4	5.4
6.....	3.0	1.1	1.1	.9	.1	3.3	5.8	10.3	22.0	17.8	12.1	5.1
7.....	3.0	1.1	1.0	.7	.3	3.5	5.8	10.4	22.9	17.5	12.1	4.8
8.....	2.8	1.0	.8	.5	.5	3.6	5.7	10.7	23.1	17.0	12.1	4.5
9.....	2.8	.9	.7	-.2	.0	3.7	5.8	10.8	23.1	16.9	12.1	4.3
10.....	2.7	.8	.6	-.3	-.2	3.9	5.6	11.0	23.4	16.9	11.9	4.1
11.....	3.0	.8	.5	-.1	-.6	4.2	6.2	11.7	24.5	16.6	11.7	4.0
12.....	3.2	.7	.4	-.0	-.8	4.3	6.5	12.3	25.2	16.2	11.6	3.9
13.....	2.9	.7	1.3	-.4	-1.1	4.3	6.7	12.8	25.2	15.9	11.5	3.9
14.....	2.9	.8	1.5	-.9	-1.3	4.5	6.4	12.8	25.4	15.8	11.4	3.9
15.....	3.0	.8	2.0	-.9	-1.4	4.8	6.1	12.8	25.5	15.6	11.1	3.9
16.....	3.0	.8	1.6	-.8	-1.7	5.0	6.2	12.5	25.3	15.5	10.8	3.7
17.....	2.9	.9	1.4	-.7	-1.6	5.2	6.0	12.7	24.9	15.4	10.8	3.6
18.....	2.8	.9	1.4	-.4	-1.4	5.4	6.0	12.6	24.5	14.9	10.8	3.5
19.....	2.6	.8	1.4	-.2	-1.4	5.4	6.1	12.9	24.0	14.7	10.6	3.4
20.....	2.6	1.4	1.2	-.3	-1.0	5.4	6.3	13.6	23.5	14.6	10.4	3.3
21.....	2.5	2.0	1.1	-.4	-.6	5.7	6.2	14.0	22.9	14.4	10.2	3.0
22.....	2.4	1.8	1.0	-.3	-.3	5.9	6.9	14.2	22.4	14.2	9.9	2.6
23.....	2.2	1.6	1.1	.1	-.2	6.0	7.3	14.5	22.1	13.8	9.4	2.1
24.....	2.1	1.7	1.2	.3	.7	6.3	7.8	14.6	21.6	13.5	8.9	2.0
25.....	2.0	1.8	1.1	.5	1.0	6.4	8.5	14.5	21.4	13.1	8.5	1.9
26.....	1.9	1.7	1.0	.8	1.1	6.5	8.8	14.5	21.2	13.0	8.0	2.0
27.....	1.8	1.8	.6	1.0	1.3	6.7	9.8	14.5	21.0	12.9	7.7	2.4
28.....	1.8	1.8	.5	2.2	1.6	6.7	10.5	14.7	21.0	12.8	7.3	2.7
29.....	1.8	1.6	.7	2.0	.....	7.0	11.5	14.8	20.6	12.6	7.0	3.1
30.....	1.7	1.6	1.2	1.8	.....	7.0	11.5	15.5	20.2	12.7	6.8	3.3
31.....	1.6	.....	1.1	1.4	.....	6.6	.....	16.0	.....	12.8	6.5	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	3.5	3.6	1.7	-0.1	0.9	4.1	9.8	16.4	23.4	18.1	14.0	6.3
2.....	3.8	3.5	1.6	.0	.8	3.9	9.9	16.4	22.8	18.2	13.6	6.1
3.....	4.0	3.4	1.4	.0	.9	3.5	10.2	17.0	22.0	18.3	13.1	5.9
4.....	4.3	3.1	1.2	-1	.9	3.6	11.1	17.5	22.0	18.3	13.0	5.9
5.....	4.7	2.7	1.1	-2	.9	3.5	11.1	17.6	21.8	18.3	12.8	5.8
6.....	5.3	2.6	1.0	-3	.8	3.3	10.5	18.5	22.1	18.3	12.5	5.7
7.....	5.4	2.5	1.3	-4	.8	3.1	10.0	18.7	22.4	18.1	12.0	5.7
8.....	5.7	2.4	1.2	-5	.6	2.9	10.2	18.4	22.5	18.1	11.8	5.7
9.....	5.7	2.3	1.1	-4	.4	2.9	10.6	18.0	22.3	18.0	11.4	5.6
10.....	5.7	2.2	.9	-3	.3	2.8	11.2	18.0	21.8	18.0	10.7	5.5
11.....	5.7	2.1	.8	-5	.2	2.7	12.0	18.4	21.5	18.3	9.9	7.4
12.....	5.7	2.0	.7	-6	.1	3.5	12.5	18.8	21.2	18.4	9.7	5.4
13.....	5.6	1.9	.6	-5	.1	3.7	12.4	19.4	21.2	18.5	9.7	5.8
14.....	5.6	1.8	.3	-5	.1	3.6	12.2	20.1	21.4	18.9	9.6	6.4
15.....	5.4	1.7	.0	-6	.2	3.4	11.7	20.5	21.8	19.1	9.5	6.9
16.....	5.4	1.6	-1	-4	.2	3.0	11.3	20.4	21.8	19.0	9.5	7.1
17.....	5.3	1.4	.0	-3	.8	2.8	11.1	20.1	21.8	18.9	9.5	7.1
18.....	4.9	1.5	.1	-1	1.1	2.4	11.3	20.0	21.7	18.7	9.4	6.9
19.....	4.7	1.6	.2	.0	1.7	2.0	11.9	19.6	21.8	18.4	9.4	6.6
20.....	4.5	1.8	.3	-1	1.9	1.6	12.3	19.4	21.2	17.9	9.4	6.5
21.....	4.3	1.4	.3	-3	3.0	1.5	12.9	19.1	21.0	17.5	9.4	6.2
22.....	4.1	1.4	.2	-2	3.5	1.5	13.1	18.9	20.5	17.4	9.0	5.9
23.....	4.0	1.4	.1	-1	4.0	1.4	13.5	18.9	19.7	17.1	8.6	5.6
24.....	3.9	1.4	.1	.4	4.3	1.7	14.4	19.0	19.3	17.5	8.6	5.1
25.....	3.8	1.7	.2	.6	4.5	1.9	15.5	18.8	19.2	17.3	8.3	4.9
26.....	3.6	1.6	.3	.6	4.4	2.6	16.5	19.0	18.8	17.2	7.9	4.5
27.....	3.5	1.5	.2	.7	4.4	3.4	16.8	19.0	18.4	16.0	7.5	4.5
28.....	3.5	1.5	.1	.9	4.3	5.3	16.8	19.5	18.2	15.1	7.4	4.4
29.....	3.6	1.5	.0	1.1	.....	6.6	16.3	21.0	17.7	15.2	7.0	4.4
30.....	3.8	1.7	.0	1.2	.....	8.1	15.9	20.9	17.8	14.9	6.7	4.3
31.....	3.6	.....	.1	1.2	.....	9.2	.....	21.8	.....	14.4	6.6	.....
1906-7.												
1.....	4.3	4.2	5.6	8.0	6.0	11.7	9.4	16.2	31.8	30.7	19.4	10.8
2.....	4.1	3.9	5.6	7.8	5.9	10.6	9.1	15.7	32.4	31.0	19.2	10.9
3.....	4.0	3.5	5.5	7.4	5.6	10.1	9.2	15.7	33.2	31.0	18.8	10.9
4.....	3.9	3.5	5.4	7.6	5.5	9.4	10.0	15.9	34.0	31.0	18.4	10.8
5.....	3.8	3.5	5.4	7.2	5.5	8.7	10.4	16.1	34.1	31.0	17.9	10.8
6.....	3.7	3.6	5.4	6.8	7.7	8.2	11.0	16.2	33.7	31.5	17.7	10.8
7.....	3.7	3.6	5.4	6.7	10.4	7.9	11.6	16.6	33.5	31.0	17.5	10.8
8.....	3.6	4.4	5.4	6.2	11.4	7.6	12.1	17.1	33.7	30.6	17.2	10.7
9.....	3.4	4.3	5.3	5.8	13.2	7.3	12.5	17.5	33.9	30.1	17.0	10.6
10.....	3.3	4.3	5.2	5.2	12.9	7.6	13.3	18.3	33.8	29.6	16.5	10.6
11.....	3.1	4.3	5.6	5.0	12.2	7.8	13.3	19.0	33.1	29.1	16.0	10.5
12.....	3.1	4.8	5.5	4.6	11.3	8.2	14.1	20.0	32.5	28.9	15.5	10.4
13.....	2.9	5.6	5.3	3.9	10.2	8.6	15.0	21.5	32.0	28.4	15.4	9.9
14.....	2.9	7.3	5.1	2.6	9.4	8.3	15.2	21.8	32.2	27.7	15.2	9.9
15.....	2.8	8.3	5.2	2.2	8.8	8.1	16.1	21.8	32.4	27.4	14.7	9.8
16.....	2.9	11.3	5.3	1.9	8.1	7.7	17.4	21.6	32.0	27.0	14.1	9.7
17.....	3.0	15.5	5.2	2.6	7.6	7.3	17.9	22.0	31.0	26.4	13.6	9.5
18.....	3.0	16.5	4.8	3.1	7.6	7.1	18.3	23.5	30.6	25.8	13.1	9.3
19.....	3.1	14.8	4.9	3.6	8.1	6.9	18.4	25.6	30.1	25.1	12.6	9.0
20.....	3.1	12.5	4.8	3.7	8.5	7.7	18.0	27.4	29.5	24.5	12.1	8.8
21.....	3.0	10.9	6.8	4.8	8.7	9.6	17.4	28.6	29.2	23.9	12.0	8.7
22.....	2.9	9.3	7.4	5.1	8.9	12.6	16.9	29.5	29.1	23.4	12.0	8.7
23.....	2.9	8.4	8.6	5.4	9.5	15.9	16.4	30.1	29.6	22.9	11.9	8.7
24.....	3.0	7.9	9.0	4.9	9.8	15.7	16.4	30.3	29.9	22.4	11.6	8.7
25.....	3.3	7.6	8.5	4.7	10.4	14.7	16.6	30.5	29.7	22.0	11.6	8.6
26.....	3.2	7.2	7.7	4.2	10.7	13.7	17.1	30.5	29.4	21.5	11.1	8.4
27.....	3.3	7.0	7.5	3.7	10.9	12.6	17.2	30.5	29.1	21.1	10.9	7.9
28.....	3.4	6.6	8.4	3.2	11.3	11.8	17.0	30.6	29.0	20.6	10.8	7.7
29.....	4.3	6.3	9.0	2.6	.....	11.1	16.6	30.6	29.3	20.1	11.1	7.6
30.....	5.1	5.9	8.8	1.9	.....	10.5	16.5	30.6	30.1	19.7	11.0	7.4
31.....	4.8	.....	8.4	1.9	.....	9.9	.....	31.0	.....	19.4	10.8	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881
and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.	7.4	3.6	3.0	3.0	0.0	1.3	6.6	17.2	25.0	30.5	19.7	9.0
2.	7.4	3.8	2.9	2.7	-.1	1.5	6.4	17.1	24.8	30.1	18.9	8.8
3.	7.3	3.8	2.8	2.5	-.2	1.5	6.4	17.5	24.9	29.9	18.0	8.5
4.	6.9	3.8	2.7	2.4	-.4	1.5	6.0	18.3	25.0	29.8	17.8	8.2
5.	6.7	3.6	2.8	2.3	-.5	1.5	5.8	19.1	25.2	29.6	16.4	7.9
6.	6.7	3.4	2.7	2.3	-.1	1.5	5.7	19.2	26.7	29.1	15.9	7.6
7.	6.6	3.1	2.7	2.1	-.2	1.5	5.8	19.2	27.8	28.7	15.4	7.3
8.	6.6	3.0	2.6	2.0	-.1	1.3	5.6	19.3	28.3	28.0	14.8	6.7
9.	6.5	2.9	2.6	2.1	-.1	1.0	5.5	20.2	29.0	27.5	14.3	6.5
10.	6.4	2.8	2.5	1.9	.5	.9	5.4	21.5	30.0	27.0	14.0	6.2
11.	6.3	2.8	2.7	1.8	.5	1.0	5.2	22.0	32.0	26.5	13.5	6.0
12.	6.2	2.9	2.8	1.7	.8	1.0	5.4	22.1	33.1	26.0	13.1	6.1
13.	6.1	3.0	3.3	1.5	.7	1.0	5.9	21.9	34.1	25.7	12.5	6.0
14.	6.1	3.0	3.2	1.5	.6	1.9	6.7	21.5	35.3	25.3	12.2	5.9
15.	6.0	3.0	2.9	1.4	.5	3.0	8.1	21.6	36.0	25.0	11.9	6.0
16.	5.8	3.0	2.7	1.2	.4	3.3	9.6	21.8	36.3	25.0	11.6	5.8
17.	5.7	2.9	2.4	1.2	.6	9.1	10.5	22.4	36.8	24.8	11.2	5.7
18.	5.6	2.8	2.5	1.1	.5	14.1	11.8	22.5	37.1	24.6	11.0	5.5
19.	5.4	2.7	2.2	1.2	.6	13.4	13.0	22.7	36.8	24.9	10.8	5.3
20.	5.3	2.7	2.0	1.5	.7	12.0	13.1	22.8	36.2	24.7	10.4	5.4
21.	5.2	2.6	1.9	1.5	.6	10.8	13.9	22.8	35.6	24.4	10.2	5.5
22.	5.1	2.6	2.1	1.3	.7	9.9	15.3	23.2	34.8	24.2	10.0	5.6
23.	4.9	2.6	3.4	1.2	.7	9.0	16.5	23.3	33.9	23.8	9.9	5.7
24.	4.8	3.0	3.8	1.3	.7	8.0	17.9	23.5	33.5	23.3	9.8	5.5
25.	4.7	3.3	3.6	1.4	.6	7.5	19.3	23.5	32.7	23.0	9.5	5.2
26.	4.6	3.4	6.0	1.1	.6	7.5	19.0	23.5	32.1	22.6	9.3	4.9
27.	4.5	3.3	5.0	.9	.6	7.8	19.0	24.0	31.6	22.0	9.3	4.9
28.	4.4	3.0	4.5	.7	.6	7.8	18.4	24.4	31.7	21.6	9.3	4.8
29.	4.3	2.9	4.2	.6	.9	7.4	17.7	24.6	31.5	21.0	9.3	4.7
30.	4.1	2.8	3.5	.6	.6	7.1	17.3	24.8	30.9	20.4	9.4	4.5
31.	3.9	.....	3.2	.4	.....	7.0	.....	24.9	.....	20.1	9.6	.....
1908-9.												
1.	4.5	2.6	3.4	.6	.....	4.4	7.2	11.5	24.6	32.6	18.0	8.1
2.	4.5	2.6	3.0	.6	.....	4.3	7.8	11.0	24.6	32.1	17.5	7.9
3.	4.4	2.6	2.9	.9	.....	4.5	8.0	10.6	26.2	31.9	17.1	7.8
4.	4.1	2.8	2.9	1.2	4.0	4.6	8.3	10.5	29.5	31.4	16.7	7.8
5.	4.0	2.9	2.9	.7	4.0	4.8	8.5	10.4	32.3	30.9	16.4	7.5
6.	3.7	2.8	2.8	.5	3.9	4.9	8.5	11.4	34.5	30.3	15.9	7.5
7.	3.3	2.8	2.8	.3	3.8	5.2	8.1	12.8	36.1	30.0	15.6	7.5
8.	3.2	2.7	2.7	.2	3.7	5.4	7.8	13.4	36.4	29.6	15.2	7.6
9.	3.2	2.5	2.7	.1	3.6	5.3	7.6	13.5	36.0	29.2	14.9	7.4
10.	3.1	2.5	2.6	.0	3.5	5.1	7.7	13.0	35.4	28.9	14.5	7.4
11.	3.2	2.5	2.5	.0	3.4	4.8	7.5	12.8	34.8	28.9	13.9	7.4
12.	3.1	2.5	2.4	.2	3.2	4.7	7.6	13.0	34.4	28.6	13.5	7.3
13.	3.0	2.5	2.4	.3	3.0	4.7	8.0	13.4	34.3	28.5	13.9	7.3
14.	3.0	2.5	2.4	.4	2.8	4.4	7.8	13.2	34.5	28.4	13.5	7.2
15.	2.9	2.5	2.3	.5	2.7	3.7	8.1	13.2	34.7	28.0	12.9	7.2
16.	2.8	2.6	2.1	1.0	3.0	3.6	8.4	13.0	35.3	27.2	12.5	7.1
17.	2.9	2.8	2.1	1.5	4.8	3.5	8.8	13.0	36.0	26.4	11.1	7.1
18.	3.7	3.0	1.8	2.4	5.0	4.8	8.7	13.5	37.2	25.4	10.7	7.0
19.	3.8	2.9	1.5	3.3	6.3	5.1	9.2	14.2	38.1	24.5	10.6	6.9
20.	4.1	3.0	1.2	15.4	6.9	5.3	9.6	14.7	37.7	23.8	10.5	6.8
21.	3.9	3.3	.9	17.5	7.8	5.3	9.4	14.6	37.7	23.1	10.4	6.7
22.	3.3	3.7	.6	17.5	7.0	5.4	9.2	14.9	37.5	22.7	10.1	6.4
23.	3.0	3.9	.5	15.2	6.4	5.5	9.0	15.5	36.9	21.9	10.0	6.0
24.	3.0	4.0	.6	13.5	5.7	5.8	9.0	15.9	36.4	21.3	9.8	6.1
25.	3.0	4.0	.6	11.8	5.3	5.2	8.8	16.0	35.8	20.4	9.5	6.1
26.	2.7	4.0	1.0	6.0	5.1	5.2	8.6	16.3	35.2	19.8	9.4	5.9
27.	2.6	3.9	1.3	3.0	4.9	5.7	8.7	16.8	34.7	19.2	9.1	5.4
28.	2.7	3.7	1.3	1.5	4.6	5.8	9.9	18.3	34.1	18.5	8.6	5.4
29.	2.7	3.7	1.5	1.0	.....	6.4	11.3	20.4	33.5	18.1	8.5	5.2
30.	2.6	3.7	1.1	.....	.....	6.8	11.4	22.9	33.0	18.2	8.5	4.9
31.	2.7	.....	.9	.....	.....	7.0	.....	24.2	.....	18.4	8.3	.....

Daily gage height, in feet, of Columbia River at The Dalles, Oreg., for 1879-1881 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	4.7	3.3	11.1	4.1	5.4	7.5	17.0	29.2	28.9	19.5	12.1	6.2
2.....	4.5	3.7	11.6	3.4	4.8	10.7	16.4	28.4	29.0	19.2	12.1	5.8
3.....	4.6	4.2	12.2	2.9	4.5	12.5	16.4	27.8	29.2	18.9	12.0	5.6
4.....	4.8	4.5	12.0	3.8	3.9	17.8	16.2	27.3	29.2	18.7	11.8	5.5
5.....	4.7	4.5	11.2	5.0	3.3	20.3	16.5	26.8	29.0	18.3	11.7	5.4
6.....	4.6	5.3	10.4	5.0	3.3	20.6	16.5	26.6	28.1	17.6	11.4	5.1
7.....	4.6	5.3	9.4	4.8	3.3	19.5	16.1	27.2	27.3	16.9	11.0	4.7
8.....	4.6	5.0	8.8	4.9	3.0	17.0	15.8	27.4	26.7	16.6	10.7	4.2
9.....	4.6	5.0	8.7	4.0	3.0	15.2	16.1	27.5	26.2	16.1	10.6	4.0
10.....	4.6	5.0	8.6	4.6	3.1	14.0	16.2	28.3	25.8	15.7	10.5	4.0
11.....	4.6	4.8	8.5	4.5	3.0	13.0	16.9	29.6	25.5	15.3	10.1	3.8
12.....	4.7	4.8	8.7	4.5	2.9	13.0	17.9	31.2	25.3	14.9	10.0	3.6
13.....	4.8	4.9	9.4	4.7	3.1	13.0	19.2	32.7	24.9	14.6	9.8	3.5
14.....	4.8	4.8	9.0	5.0	3.4	13.4	20.6	33.1	25.1	14.6	9.5	3.1
15.....	4.7	4.6	8.6	5.5	3.4	13.7	20.8	32.9	24.9	14.4	9.4	3.3
16.....	4.7	4.4	8.5	5.6	3.7	14.3	20.8	32.2	24.6	14.2	9.0	3.0
17.....	4.6	4.2	8.1	5.6	3.2	15.0	20.1	31.8	24.3	13.9	9.0	2.9
18.....	4.4	4.0	7.6	5.7	3.0	15.6	19.5	31.2	23.9	13.8	8.9	2.7
19.....	4.3	4.6	7.4	6.7	3.0	16.3	19.3	30.7	23.7	13.8	8.9	2.9
20.....	4.3	5.5	7.1	5.6	3.0	16.9	19.6	30.3	23.4	13.7	9.1	2.9
21.....	4.2	5.5	6.8	5.6	3.2	17.8	20.6	30.0	22.8	13.6	8.9	2.8
22.....	4.1	6.0	6.5	4.4	2.5	21.0	22.0	29.8	22.5	13.6	8.7	2.6
23.....	4.0	9.1	6.1	6.5	2.3	22.4	23.2	29.2	22.1	13.5	8.4	2.8
24.....	4.2	10.1	5.5	6.6	2.1	23.7	23.6	28.7	21.6	13.4	7.8	2.3
25.....	4.2	10.5	4.9	6.1	3.0	24.4	23.7	28.8	21.3	13.2	7.3	2.4
26.....	4.0	12.0	4.7	5.6	3.8	23.3	24.3	29.2	21.1	13.0	7.3	2.4
27.....	3.8	13.6	4.4	5.5	5.3	22.0	25.8	29.6	20.7	12.9	7.4	2.4
28.....	3.7	13.8	4.2	5.3	6.3	21.0	27.4	30.0	20.3	12.7	7.4	2.4
29.....	3.6	12.8	4.1	5.0	-----	19.4	28.8	29.6	20.0	12.5	7.0	2.3
30.....	3.5	12.2	4.0	4.5	-----	18.3	29.2	30.0	19.8	12.3	6.7	2.3
31.....	3.4	-----	4.2	4.7	-----	17.5	-----	29.3	-----	12.1	6.6	-----

NOTE.—Obstruction by ice at and below The Dalles, noted by observer, as follows:

1898. Ice began running Dec. 12; river blocked with ice Dec. 13-22.
 1899. Ice running Jan. 4; river blocked Jan. 6-20 and Feb. 4-16; river clear of running ice Feb. 19.
 1900. Jan. 15, drift ice running.
 1901. Jan. 10, ice running.
 1902. Jan. 26, ice running; Jan. 27 river blocked with ice; Feb. 9, river free from ice.
 1903 and 1904. No ice reported.
 1905. Jan. 19-21, ice running; Feb. 12-18, river blocked; Feb. 19, river free of ice.
 1906. No ice noted.
 1907. Jan. 7, ice running; Jan. 11, river blocked with ice; Feb. 1, ice gorge; Feb. 9, river clear of ice.
 1908. Feb. 3-5, river full of running ice; Feb. 6, ice nearly all out.
 1909. Jan. 6, ice running; Jan. 7, river blocked with ice during night; Jan. 11-27, an ice jam formed at the rapids above the station and acted as a dam, but released the stored water when the jam broke up as the result of heavy rains in Oregon; Jan. 30 to Feb. 3, river frozen, gage not read; Dec. 6, thin coat of ice.
 1910. Jan. 1-3 and 6, ice running; Jan. 4, thin coat of ice; Jan. 7, river blocked with ice; no note of when it went out, probably about the 17th.

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1878.												
1									373,000	370,000	222,000	151,000
2									370,000	359,000	219,000	149,000
3									377,000	341,000	219,000	149,000
4									381,000	328,000	214,000	149,000
5									389,000	322,000	212,000	149,000
6									396,000	316,000	205,000	147,000
7									415,000	307,000	202,000	145,000
8									438,000	304,000	200,000	143,000
9									453,000	298,000	198,000	142,000
10									469,000	289,000	195,000	140,000
11									481,000	284,000	195,000	140,000
12									485,000	281,000	190,000	136,000
13									481,000	275,000	186,000	132,000
14									477,000	272,000	181,000	130,000
15									477,000	270,000	181,000	127,000
16									465,000	267,000	176,000	124,000
17									453,000	265,000	172,000	122,000
18									450,000	262,000	170,000	119,000
19									446,000	260,000	170,000	115,000
20									442,000	254,000	172,000	110,000
21									438,000	254,000	170,000	106,000
22									430,000	244,000	170,000	103,000
23									427,000	239,000	166,000	100,000
24									415,000	232,000	166,000	98,900
25									415,000	229,000	168,000	110,000
26									408,000	224,000	168,000	95,400
27									392,000	222,000	166,000	95,400
28									385,000	222,000	164,000	94,300
29									373,000	222,000	162,000	93,200
30									373,000	219,000	159,000	93,200
31										222,000	155,000	
1878-79.												
1	93,200	82,900	87,700	71,000	65,200	192,000	313,000	325,000	559,000	609,000	379,000	204,000
2	93,200	82,900	87,700	70,000	62,800	230,000	325,000	325,000	559,000	609,000	372,000	200,000
3	93,200	82,000	86,600	69,000	64,400	212,000	351,000	334,000	559,000	602,000	356,000	195,000
4	94,300	81,100	93,200	67,000	62,800	188,000	370,000	356,000	568,000	590,000	345,000	192,000
5	93,200	81,100	96,500	66,100	59,600	175,000	381,000	356,000	588,000	580,000	336,000	186,000
6	92,100	81,100	100,000	64,400	60,400	155,000	393,000	356,000	614,000	573,000	329,000	183,000
7	91,000	80,200	102,000	63,600	63,600	148,000	405,000	354,000	624,000	571,000	325,000	180,000
8	88,800	80,200	104,000	62,000	63,600	140,000	427,000	349,000	626,000	559,000	317,000	171,000
9	88,800	79,400	106,000	61,200	63,600	140,000	444,000	345,000	631,000	547,000	307,000	170,000
10	88,800	79,400	109,000	63,600	64,400	142,000	453,000	345,000	626,000	542,000	300,000	167,000
11	88,800	79,400	112,000	65,200	66,100	140,000	441,000	347,000	609,000	540,000	292,000	162,000
12	88,800	78,600	115,000	67,000	61,200	145,000	417,000	342,000	597,000	535,000	285,000	157,000
13	88,800	78,600	109,000	69,000	67,000	139,000	398,000	338,000	585,000	530,000	277,000	154,000
14	88,800	77,800	105,000	70,000	64,400	140,000	377,000	336,000	600,000	525,000	271,000	151,000
15	93,200	77,000	100,000	67,000	67,000	145,000	363,000	338,000	609,000	520,000	266,000	149,000
16	92,100	77,000	94,400	65,200	69,000	154,000	361,000	347,000	626,000	518,000	262,000	149,000
17	88,800	76,200	91,100	63,600	72,000	157,000	358,000	370,000	639,000	506,000	260,000	148,000
18	87,700	76,200	88,900	61,200	73,000	155,000	345,000	391,000	643,000	499,000	257,000	145,000
19	86,600	86,600	88,900	62,000	74,000	154,000	340,000	400,000	640,000	489,000	250,000	142,000
20	85,600	86,600	88,900	62,800	78,000	154,000	323,000	403,000	631,000	477,000	250,000	137,000
21	86,600	85,600	85,600	63,600	93,300	154,000	317,000	408,000	631,000	468,000	246,000	136,000
22	87,700	88,800	82,300	64,400	91,100	152,000	317,000	410,000	626,000	453,000	242,000	134,000
23	88,800	91,000	81,200	65,200	93,300	155,000	321,000	417,000	626,000	446,000	237,000	130,000
24	100,000	93,200	80,100	66,100	148,000	157,000	319,000	424,000	631,000	434,000	235,000	129,000
25	96,500	93,200	79,000	66,100	134,000	178,000	317,000	451,000	638,000	427,000	232,000	127,000
26	91,000	93,200	78,000	67,000	139,000	192,000	313,000	463,000	631,000	417,000	224,000	129,000
27	88,800	91,000	77,000	68,000	217,000	221,000	319,000	494,000	626,000	408,000	222,000	126,000
28	86,600	88,800	75,000	68,000	205,000	260,000	329,000	506,000	614,000	403,000	219,000	123,000
29	84,700	88,800	74,600	69,000			313,000	332,000	518,000	393,000	217,000	122,000
30	83,800	87,700	72,000	69,000			313,000	332,000	537,000	604,000	388,000	212,000
31	82,900		71,000	65,200			317,000		559,000	381,000	209,000	

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879-80.												
1.....	119,000	91,000	75,400	81,100	95,000	73,800	94,000	255,000	536,000	914,000	607,000	254,000
2.....	124,000	91,000	77,800	89,200	88,300	72,200	92,000	289,000	558,000	914,000	594,000	248,000
3.....	123,000	91,000	82,000	89,200	85,600	70,600	92,000	316,000	560,000	907,000	572,000	245,000
4.....	122,000	89,200	82,900	90,100	85,800	70,600	89,200	365,000	572,000	900,000	549,000	240,000
5.....	124,000	89,200	90,100	89,200	85,600	75,400	87,400	395,000	583,000	893,000	530,000	234,000
6.....	123,000	91,000	96,000	94,000	81,100	73,800	88,300	412,000	602,000	877,000	507,000	230,000
7.....	121,000	90,100	97,000	103,000	80,200	73,800	93,000	424,000	602,000	872,000	491,000	227,000
8.....	119,000	89,200	97,000	103,000	78,600	73,800	96,000	409,000	692,000	881,000	463,000	222,000
9.....	118,000	91,000	92,000	95,000	78,600	75,400	98,000	390,000	609,000	881,000	439,000	219,000
10.....	120,000	92,000	88,300	95,000	79,400	79,400	106,000	365,000	638,000	872,000	435,000	215,000
11.....	115,000	93,000	85,600	90,100	79,400	72,200	128,000	350,000	638,000	863,000	426,000	209,000
12.....	115,000	93,000	85,600	84,700	77,800	69,000	152,000	337,000	622,000	849,000	411,000	204,000
13.....	114,000	89,200	91,000	84,700	76,200	69,000	181,000	332,000	622,000	826,000	394,000	206,000
14.....	113,000	89,200	89,200	81,000	76,200	69,800	188,000	340,000	631,000	785,000	383,000	205,000
15.....	116,000	92,000	89,200	95,000	77,800	69,800	195,000	349,000	644,000	762,000	370,000	202,000
16.....	112,000	89,200	91,000	95,000	75,400	69,800	195,000	352,000	704,000	746,000	356,000	199,000
17.....	110,000	85,600	95,000	98,000	73,800	69,000	192,000	363,000	734,000	746,000	344,000	194,000
18.....	107,000	84,700	99,000	102,000	73,800	69,000	183,000	367,000	752,000	755,000	330,000	188,000
19.....	107,000	83,800	98,000	104,000	72,200	69,800	174,000	374,000	764,000	759,000	323,000	185,000
20.....	108,000	82,000	95,000	112,000	70,600	69,000	161,000	397,000	776,000	762,000	313,000	181,000
21.....	105,000	80,200	90,100	111,000	69,800	69,800	155,000	418,000	785,000	766,000	308,000	177,000
22.....	100,000	79,400	88,300	111,000	68,300	68,300	154,000	447,000	776,000	755,000	308,000	173,000
23.....	99,000	78,600	82,900	108,000	69,000	68,300	159,000	479,000	752,000	746,000	303,000	170,000
24.....	102,000	77,800	77,800	108,000	70,600	69,800	170,000	505,000	748,000	736,000	294,000	169,000
25.....	102,000	79,400	76,200	112,000	76,200	73,800	183,000	511,000	769,000	730,000	287,000	166,000
26.....	100,000	76,200	73,000	110,000	76,200	77,800	187,000	499,000	801,000	725,000	281,000	161,000
27.....	99,000	76,200	74,600	105,000	72,200	85,600	194,000	491,000	854,000	716,000	276,000	157,000
28.....	101,000	76,200	73,000	103,000	70,600	93,000	204,000	479,000	877,000	700,000	273,000	151,000
29.....	95,000	75,400	73,800	102,000	70,600	95,000	209,000	491,000	902,000	671,000	269,000	155,000
30.....	92,000	75,400	69,000	101,000	.....	97,000	232,000	511,000	914,000	653,000	263,000	154,000
31.....	91,000	.....	69,800	95,000	.....	97,000	.....	524,000	.....	629,000	258,000	.....
1880-81.												
1.....	152,000	121,000	82,900	86,500	77,800	272,000	278,000	439,000	426,000	556,000	311,000	178,000
2.....	151,000	121,000	82,000	88,300	136,000	302,000	305,000	430,000	430,000	552,000	306,000	175,000
3.....	150,000	118,000	81,100	88,300	209,000	318,000	334,000	424,000	449,000	542,000	302,000	170,000
4.....	149,000	115,000	79,400	89,200	248,000	308,000	367,000	414,000	479,000	544,000	300,000	167,000
5.....	148,000	115,000	77,800	87,400	344,000	289,000	392,000	414,000	520,000	535,000	298,000	163,000
6.....	147,000	115,000	77,800	89,200	361,000	270,000	401,000	420,000	560,000	528,000	294,000	162,000
7.....	146,000	116,000	76,200	85,200	361,000	269,000	401,000	432,000	572,000	523,000	286,000	155,000
8.....	145,000	116,000	75,400	81,100	344,000	239,000	401,000	449,000	570,000	513,000	281,000	154,000
9.....	144,000	116,000	75,400	79,400	313,000	229,000	401,000	442,000	570,000	501,000	273,000	152,000
10.....	143,000	117,000	76,200	77,000	270,000	222,000	390,000	435,000	572,000	489,000	266,000	149,000
11.....	142,000	117,000	77,800	85,600	239,000	213,000	376,000	424,000	572,000	480,000	260,000	145,000
12.....	141,000	116,000	80,200	165,000	218,000	208,000	352,000	416,000	570,000	470,000	251,000	142,000
13.....	137,000	114,000	82,000	174,000	202,000	204,000	339,000	405,000	570,000	463,000	246,000	139,000
14.....	132,000	112,000	83,800	183,000	183,000	199,000	327,000	405,000	574,000	451,000	242,000	134,000
15.....	130,000	108,000	83,800	195,000	170,000	195,000	320,000	405,000	581,000	439,000	240,000	131,000
16.....	128,000	105,000	93,000	183,000	161,000	192,000	313,000	409,000	594,000	427,000	239,000	131,000
17.....	125,000	102,000	92,000	161,000	154,000	190,000	318,000	430,000	598,000	412,000	237,000	131,000
18.....	123,000	99,000	89,200	130,000	148,000	185,000	334,000	433,000	594,000	403,000	233,000	129,000
19.....	121,000	97,000	84,700	125,000	142,000	178,000	347,000	433,000	583,000	391,000	232,000	126,000
20.....	117,000	95,000	82,000	117,000	142,000	174,000	367,000	430,000	562,000	381,000	226,000	124,000
21.....	115,000	94,000	80,200	108,000	141,000	170,000	388,000	428,000	547,000	377,000	224,000	124,000
22.....	115,000	92,000	78,600	93,000	157,000	174,000	411,000	426,000	547,000	368,000	222,000	124,000
23.....	114,000	90,100	77,800	90,100	161,000	177,000	428,000	437,000	547,000	363,000	215,000	124,000
24.....	114,000	89,200	77,000	87,400	172,000	180,000	457,000	441,000	545,000	354,000	212,000	127,000
25.....	113,000	88,300	77,000	85,600	185,000	184,000	495,000	435,000	539,000	347,000	207,000	127,000
26.....	113,000	87,400	77,000	83,800	194,000	188,000	475,000	432,000	539,000	340,000	202,000	127,000
27.....	114,000	86,500	77,800	82,000	222,000	192,000	475,000	426,000	541,000	334,000	197,000	130,000
28.....	116,000	85,600	78,600	80,200	267,000	205,000	475,000	420,000	541,000	329,000	193,000	129,000
29.....	120,000	84,700	80,200	80,200	.....	229,000	469,000	416,000	545,000	325,000	190,000	131,000
30.....	120,000	83,800	82,000	76,200	.....	239,000	455,000	420,000	547,000	319,000	185,000	131,000
31.....	121,000	.....	83,800	73,800	.....	251,000	.....	424,000	.....	313,000	181,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1881-82.												
1	130,000	109,000	91,600	80,100	60,400	117,000	192,000	210,000	540,000	643,000	313,000	197,000
2	130,000	110,000	92,200	81,200	62,000	108,000	195,000	212,000	554,000	636,000	306,000	193,000
3	126,000	113,000	86,700	82,300	62,800	112,000	209,000	222,000	588,000	626,000	296,000	185,000
4	124,000	113,000	86,700	82,300	63,600	112,000	226,000	237,000	631,000	626,000	290,000	181,000
5	122,000	113,000	85,600	87,800	68,000	108,000	240,000	260,000	678,000	619,000	285,000	176,000
6	121,000	123,000	85,600	93,300	70,000	102,000	250,000	281,000	720,000	614,000	281,000	173,000
7	121,000	121,000	84,500	94,400	70,000	92,200	262,000	294,000	768,000	609,000	277,000	165,000
8	118,000	119,000	85,600	93,300	70,000	90,000	262,000	298,000	813,000	604,000	271,000	165,000
9	116,000	133,000	86,700	93,300	69,000	87,800	255,000	306,000	858,000	588,000	269,000	162,000
10	114,000	134,000	86,700	92,200	70,000	84,500	244,000	304,000	863,000	573,000	266,000	160,000
11	113,000	127,000	92,200	92,200	69,000	81,200	237,000	307,000	863,000	556,000	266,000	157,000
12	110,000	122,000	88,900	88,900	66,100	79,000	228,000	307,000	860,000	532,000	268,000	154,000
13	106,000	122,000	90,000	86,700	66,100	76,000	224,000	313,000	883,000	518,000	268,000	154,000
14	105,000	117,000	88,900	83,400	65,200	75,000	214,000	323,000	883,000	506,000	269,000	149,000
15	106,000	118,000	87,800	81,200	65,200	75,000	212,000	351,000	880,000	487,000	269,000	146,000
16	105,000	119,000	85,600	79,000	69,000	75,000	210,000	365,000	868,000	468,000	273,000	143,000
17	104,000	115,000	87,800	75,000	70,000	76,000	215,000	370,000	860,000	451,000	275,000	140,000
18	103,000	115,000	87,800	73,000	70,000	77,000	222,000	363,000	860,000	434,000	279,000	140,000
19	104,000	112,000	91,100	70,000	67,000	78,000	221,000	354,000	868,000	417,000	279,000	140,000
20	104,000	112,000	87,800	71,000	61,200	80,100	221,000	345,000	858,000	403,000	279,000	139,000
21	103,000	109,000	86,700	71,000	61,200	79,000	230,000	340,000	848,000	391,000	273,000	137,000
22	102,000	106,000	86,700	69,000	61,200	78,000	237,000	334,000	820,000	379,000	264,000	137,000
23	100,000	104,000	86,700	69,000	60,400	78,000	240,000	332,000	793,000	372,000	255,000	134,000
24	100,000	97,900	87,800	70,000	62,000	78,000	240,000	334,000	766,000	365,000	246,000	130,000
25	99,100	96,700	87,800	69,000	62,800	82,300	246,000	342,000	738,000	353,000	240,000	129,000
26	99,100	97,900	82,300	70,000	63,600	86,700	242,000	363,000	718,000	351,000	232,000	123,000
27	100,000	96,700	82,300	72,000	70,000	97,900	237,000	388,000	696,000	347,000	224,000	122,000
28	102,000	93,300	82,300	70,000	92,200	114,000	230,000	434,000	680,000	345,000	217,000	122,000
29	104,000	92,200	81,200	68,000	-----	139,000	224,000	472,000	666,000	336,000	210,000	119,000
30	110,000	91,100	78,000	60,400	-----	162,000	215,000	508,000	656,000	327,000	207,000	118,000
31	109,000	-----	78,000	60,400	-----	183,000	-----	542,000	-----	321,000	200,000	-----
1882-83.												
1	115,000	106,000	80,100	94,400	148,000	127,000	283,000	195,000	501,000	542,000	237,000	152,000
2	114,000	113,000	79,000	86,700	129,000	133,000	271,000	209,000	501,000	542,000	233,000	151,000
3	113,000	106,000	78,000	79,000	102,000	124,000	255,000	232,000	501,000	540,000	230,000	146,000
4	110,000	106,000	79,000	79,000	87,500	121,000	239,000	242,000	499,000	530,000	224,000	143,000
5	110,000	105,000	83,400	75,000	73,000	124,000	233,000	250,000	496,000	520,000	221,000	142,000
6	109,000	108,000	83,400	92,200	73,000	126,000	217,000	253,000	494,000	513,000	219,000	140,000
7	109,000	106,000	86,700	96,700	72,000	139,000	215,000	253,000	494,000	501,000	219,000	137,000
8	109,000	106,000	88,900	94,400	70,000	142,000	214,000	264,000	494,000	484,000	214,000	136,000
9	109,000	103,000	91,100	94,400	67,000	139,000	198,000	288,000	501,000	470,000	214,000	131,000
10	108,000	106,000	94,400	102,000	63,600	136,000	198,000	329,000	500,000	463,000	214,000	129,000
11	108,000	106,000	103,000	95,500	66,100	145,000	200,000	354,000	542,000	453,000	214,000	127,000
12	113,000	100,000	105,000	99,100	65,200	155,000	198,000	370,000	561,000	446,000	214,000	124,000
13	115,000	97,900	159,000	96,700	68,000	159,000	204,000	400,000	571,000	434,000	214,000	123,000
14	114,000	94,400	180,000	96,700	66,100	162,000	192,000	434,000	573,000	424,000	214,000	123,000
15	117,000	91,100	157,000	93,300	68,000	163,000	186,000	477,000	564,000	415,000	207,000	122,000
16	118,000	89,900	188,000	88,900	72,000	165,000	185,000	494,000	552,000	408,000	207,000	122,000
17	119,000	88,900	197,000	90,000	75,000	163,000	178,000	492,000	544,000	398,000	204,000	123,000
18	115,000	86,700	175,000	84,500	75,000	175,000	175,000	496,000	540,000	374,000	202,000	124,000
19	115,000	87,800	159,000	83,400	76,000	180,000	173,000	501,000	544,000	368,000	202,000	124,000
20	114,000	87,800	145,000	73,000	82,300	198,000	171,000	496,000	552,000	354,000	195,000	122,000
21	112,000	85,600	137,000	68,000	85,600	197,000	170,000	487,000	552,000	340,000	195,000	122,000
22	110,000	85,600	142,000	58,800	90,000	200,000	170,000	480,000	559,000	323,000	195,000	122,000
23	109,000	86,700	140,000	60,400	99,100	205,000	175,000	484,000	559,000	309,000	190,000	119,000
24	108,000	83,400	127,000	62,000	104,000	209,000	175,000	511,000	554,000	298,000	186,000	115,000
25	105,000	83,400	126,000	63,600	109,000	222,000	173,000	525,000	544,000	290,000	181,000	113,000
26	103,000	84,500	133,000	72,000	109,000	228,000	167,000	518,000	544,000	283,000	180,000	112,000
27	104,000	83,400	119,000	76,000	129,000	228,000	168,000	504,000	542,000	273,000	175,000	109,000
28	102,000	83,400	115,000	86,700	126,000	255,000	173,000	496,000	542,000	262,000	168,000	108,000
29	102,000	83,400	109,000	99,100	-----	246,000	176,000	492,000	542,000	253,000	167,000	104,000
30	102,000	79,000	106,000	112,000	-----	257,000	183,000	492,000	523,000	251,000	160,000	103,000
31	103,000	-----	96,700	148,000	-----	298,000	-----	504,000	-----	244,000	157,000	-----

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	
1883-84.													
1.....	100,000	78,000	73,000	66,100	62,000	117,000	117,000	262,000	602,000	573,000	300,000	195,000	
2.....	99,100	77,000	73,000	62,800	62,000	113,000	117,000	250,000	600,000	566,000	294,000	195,000	
3.....	99,100	79,000	78,000	63,600	62,000	106,000	117,000	255,000	607,000	552,000	290,000	194,000	
4.....	97,900	75,000	83,400	74,000	62,800	103,000	121,000	258,000	628,000	542,000	290,000	194,000	
5.....	96,700	75,000	84,500	75,000	61,200	104,000	127,000	262,000	648,000	523,000	286,000	192,000	
6.....	95,500	75,000	84,500	75,000	60,400	96,700	134,000	283,000	666,000	508,000	286,000	192,000	
7.....	94,400	75,000	83,400	77,000	58,800	96,700	142,000	281,000	678,000	492,000	284,000	192,000	
8.....	94,400	75,000	83,100	85,600	56,000	96,700	151,000	281,000	683,000	480,000	280,000	190,000	
9.....	96,700	74,000	78,000	94,400	56,000	95,500	163,000	275,000	680,000	460,000	276,000	192,000	
10.....	97,900	72,000	77,000	91,100	56,000	96,700	171,000	271,000	678,000	446,000	276,000	192,000	
11.....	95,500	74,000	75,000	87,800	53,600	99,100	188,000	296,000	680,000	434,000	274,000	188,000	
12.....	95,500	73,000	73,000	83,400	48,300	99,100	200,000	332,000	688,000	422,000	272,000	185,000	
13.....	95,500	73,000	73,000	82,300	46,300	100,000	221,000	365,000	698,000	408,000	270,000	179,000	
14.....	96,700	73,000	71,000	80,100	45,800	95,500	240,000	386,000	688,000	393,000	268,000	176,000	
15.....	95,500	72,000	70,000	78,000	46,300	92,200	237,000	391,000	688,000	384,000	268,000	172,000	
16.....	92,200	71,000	69,000	75,000	46,800	88,900	233,000	388,000	678,000	379,000	266,000	169,000	
17.....	91,100	71,000	67,000	72,000	46,800	87,800	224,000	405,000	678,000	374,000	260,000	167,000	
18.....	91,100	70,000	67,000	70,000	47,800	88,900	221,000	420,000	658,000	368,000	260,000	165,000	
19.....	90,000	70,000	67,000	71,000	48,300	87,800	209,000	436,000	648,000	358,000	258,000	160,000	
20.....	90,000	69,000	64,400	69,000	50,600	95,500	207,000	470,000	640,000	347,000	256,000	155,000	
21.....	87,800	69,000	64,400	69,000	63,600	103,000	207,000	484,000	636,000	340,000	248,000	150,000	
22.....	86,700	66,100	65,200	68,000	84,500	110,000	214,000	506,000	643,000	334,000	245,000	144,000	
23.....	86,700	75,000	66,100	66,100	93,300	115,000	224,000	513,000	636,000	331,000	233,000	139,000	
24.....	83,400	74,000	67,000	62,000	102,000	119,000	242,000	516,000	633,000	327,000	231,000	136,000	
25.....	82,300	73,000	68,000	60,400	110,000	119,000	264,000	518,000	633,000	323,000	224,000	134,000	
26.....	82,300	73,000	74,000	59,600	126,000	118,000	281,000	520,000	628,000	319,000	215,000	131,000	
27.....	79,000	85,600	80,100	58,800	163,000	121,000	286,000	540,000	626,000	312,000	210,000	126,000	
28.....	80,100	84,500	78,000	62,800	142,000	121,000	283,000	556,000	616,000	306,000	206,000	126,000	
29.....	80,100	79,000	75,000	64,400	124,000	119,000	273,000	592,000	597,000	304,000	201,000	123,000	
30.....	81,200	75,000	75,000	63,600	-----	121,000	271,000	607,000	588,000	302,000	194,000	123,000	
31.....	81,200	-----	73,000	61,200	-----	119,000	-----	604,000	-----	298,000	195,000	-----	
1884-85.													
1.....	117,000	145,000	110,000	76,000	95,400	185,000	215,000	237,000	388,000	447,000	233,000	179,000	
2.....	119,000	145,000	110,000	77,000	96,700	188,000	222,000	245,000	405,000	446,000	226,000	179,000	
3.....	117,000	149,000	106,000	79,000	116,000	179,000	230,000	254,000	424,000	441,000	222,000	174,000	
4.....	115,000	159,000	106,000	83,400	170,000	174,000	241,000	270,000	434,000	439,000	219,000	172,000	
5.....	113,000	152,000	103,000	84,500	164,000	165,000	246,000	290,000	436,000	429,000	219,000	169,000	
6.....	113,000	150,000	106,000	91,600	174,000	160,000	258,000	308,000	439,000	424,000	219,000	167,000	
7.....	112,000	144,000	105,000	101,000	164,000	157,000	266,000	331,000	444,000	412,000	219,000	162,000	
8.....	112,000	144,000	109,000	123,000	174,000	149,000	276,000	354,000	446,000	408,000	217,000	162,000	
9.....	115,000	144,000	109,000	122,000	170,000	149,000	284,000	374,000	432,000	396,000	212,000	159,000	
10.....	116,000	142,000	102,000	122,000	170,000	150,000	280,000	384,000	424,000	388,000	215,000	159,000	
11.....	117,000	142,000	101,000	123,000	169,000	154,000	274,000	381,000	420,000	377,000	213,000	155,000	
12.....	128,000	142,000	96,700	122,000	169,000	162,000	270,000	381,000	415,000	372,000	208,000	152,000	
13.....	131,000	142,000	94,100	115,000	155,000	170,000	272,000	377,000	420,000	356,000	203,000	152,000	
14.....	132,000	139,000	90,400	109,000	181,000	179,000	274,000	381,000	434,000	349,000	203,000	155,000	
15.....	142,000	136,000	90,400	102,000	167,000	185,000	284,000	400,000	453,000	340,000	201,000	152,000	
16.....	142,000	136,000	78,900	99,300	167,000	194,000	288,000	427,000	453,000	329,000	197,000	160,000	
17.....	142,000	132,000	67,300	95,400	165,000	194,000	290,000	434,000	456,000	321,000	197,000	165,000	
18.....	145,000	132,000	55,800	91,600	155,000	199,000	290,000	434,000	456,000	317,000	194,000	155,000	
19.....	150,000	131,000	44,300	89,200	162,000	208,000	284,000	429,000	460,000	308,000	194,000	155,000	
20.....	150,000	129,000	44,300	89,200	167,000	206,000	276,000	420,000	463,000	304,000	194,000	152,000	
21.....	149,000	126,000	44,800	84,500	167,000	201,000	266,000	420,000	470,000	296,000	194,000	149,000	
22.....	147,000	126,000	45,600	83,400	172,000	215,000	260,000	422,000	472,000	294,000	192,000	145,000	
23.....	147,000	125,000	47,300	80,100	179,000	217,000	256,000	422,000	482,000	286,000	190,000	142,000	
24.....	145,000	122,000	56,000	80,100	190,000	219,000	252,000	422,000	472,000	280,000	194,000	139,000	
25.....	145,000	120,000	62,800	78,000	185,000	221,000	241,000	410,000	468,000	276,000	192,000	139,000	
26.....	147,000	119,000	66,100	76,000	185,000	213,000	241,000	408,000	465,000	268,000	188,000	142,000	
27.....	144,000	117,000	67,000	79,000	181,000	213,000	235,000	393,000	463,000	260,000	190,000	139,000	
28.....	145,000	116,000	67,000	78,000	177,000	208,000	233,000	386,000	456,000	252,000	188,000	139,000	
29.....	145,000	116,000	68,000	78,000	-----	-----	212,000	230,000	386,000	453,000	246,000	186,000	142,000
30.....	145,000	116,000	72,000	86,700	-----	-----	212,000	233,000	384,000	448,000	241,000	183,000	145,000
31.....	145,000	-----	74,000	95,400	-----	-----	212,000	-----	381,000	-----	237,000	183,000	-----

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1885-86.												
1	145,000	92,800	102,000	109,000	183,000	134,000	129,000	256,000	607,000	456,000	262,000	147,000
2	149,000	95,400	102,000	108,000	185,000	131,000	129,000	252,000	612,000	448,000	258,000	147,000
3	145,000	102,000	98,000	105,000	186,000	128,000	132,000	252,000	619,000	441,000	250,000	144,000
4	149,000	98,000	101,000	96,700	181,000	125,000	144,000	246,000	631,000	434,000	245,000	140,000
5	149,000	96,700	102,000	96,700	185,000	123,000	152,000	245,000	640,000	424,000	243,000	140,000
6	145,000	98,000	102,000	98,000	194,000	122,000	160,000	241,000	648,000	417,000	237,000	140,000
7	142,000	105,000	102,000	95,400	192,000	116,000	162,000	239,000	658,000	408,000	231,000	140,000
8	139,000	115,000	106,000	91,600	186,000	117,000	167,000	245,000	670,000	400,000	226,000	139,000
9	139,000	108,000	106,000	88,000	183,000	115,000	169,000	248,000	673,000	388,000	224,000	140,000
10	136,000	102,000	105,000	88,000	192,000	109,000	172,000	258,000	666,000	379,000	221,000	140,000
11	136,000	106,000	103,000	84,500	206,000	110,000	183,000	272,000	656,000	365,000	217,000	137,000
12	132,000	112,000	101,000	83,400	199,000	109,000	195,000	280,000	656,000	356,000	213,000	134,000
13	129,000	112,000	99,300	84,500	197,000	112,000	204,000	280,000	648,000	347,000	210,000	131,000
14	126,000	112,000	95,400	86,800	206,000	115,000	219,000	280,000	628,000	347,000	206,000	128,000
15	123,000	110,000	92,800	84,500	217,000	113,000	231,000	276,000	609,000	345,000	204,000	126,000
16	125,000	108,000	92,800	85,600	206,000	122,000	239,000	278,000	597,000	340,000	203,000	126,000
17	120,000	106,000	101,000	81,200	192,000	129,000	239,000	274,000	580,000	338,000	197,000	125,000
18	119,000	99,300	108,000	81,200	183,000	126,000	237,000	274,000	564,000	336,000	194,000	122,000
19	116,000	101,000	105,000	72,000	172,000	123,000	246,000	282,000	549,000	331,000	188,000	120,000
20	113,000	98,000	102,000	67,000	164,000	120,000	250,000	300,000	537,000	327,000	186,000	117,000
21	110,000	99,300	103,000	68,000	157,000	117,000	250,000	340,000	525,000	323,000	183,000	115,000
22	106,000	99,300	108,000	64,400	154,000	120,000	250,000	396,000	516,000	319,000	179,000	113,000
23	105,000	101,000	103,000	71,000	147,000	126,000	245,000	427,000	501,000	312,000	172,000	110,000
24	103,000	98,000	102,000	75,000	149,000	123,000	248,000	441,000	496,000	308,000	169,000	112,000
25	102,000	101,000	101,000	81,200	144,000	120,000	250,000	451,000	489,000	300,000	165,000	110,000
26	101,000	101,000	102,000	112,000	144,000	122,000	245,000	470,000	482,000	294,000	165,000	106,000
27	101,000	102,000	103,000	142,000	142,000	128,000	256,000	506,000	472,000	292,000	162,000	105,000
28	96,700	103,000	102,000	172,000	140,000	128,000	256,000	540,000	465,000	286,000	157,000	103,000
29	96,700	103,000	109,000	203,000	-----	129,000	260,000	576,000	460,000	280,000	157,000	102,000
30	95,400	103,000	109,000	185,000	-----	129,000	258,000	592,000	458,000	272,000	154,000	101,000
31	98,000	-----	110,000	159,000	-----	129,000	-----	597,000	-----	266,000	150,000	-----
1886-87.												
1	99,300	78,000	62,000	89,200	106,000	73,000	235,000	319,000	780,000	760,000	393,000	221,000
2	99,300	76,000	62,800	91,600	106,000	77,000	241,000	361,000	846,000	746,000	381,000	217,000
3	99,300	76,000	64,400	92,800	100,000	77,000	248,000	358,000	866,000	736,000	374,000	215,000
4	99,300	76,000	65,200	89,200	94,100	73,000	270,000	349,000	853,000	730,000	363,000	213,000
5	96,700	78,000	65,200	92,800	82,300	76,000	272,000	340,000	818,000	723,000	351,000	208,000
6	95,400	76,000	65,200	91,600	70,000	85,600	262,000	334,000	790,000	718,000	340,000	204,000
7	91,600	73,000	66,100	95,400	73,000	99,300	254,000	336,000	773,000	708,000	334,000	197,000
8	91,600	73,000	71,000	91,600	69,000	108,000	250,000	345,000	756,000	700,000	329,000	194,000
9	85,600	73,000	73,000	86,800	66,100	120,000	252,000	349,000	733,000	698,000	319,000	190,000
10	85,600	74,000	73,000	90,400	69,000	144,000	262,000	345,000	718,000	696,000	310,000	183,000
11	84,500	70,000	72,000	90,400	68,000	159,000	266,000	338,000	713,000	678,000	304,000	181,000
12	82,300	70,000	75,000	90,400	69,000	176,000	268,000	345,000	718,000	660,000	300,000	177,000
13	85,600	71,000	80,100	92,800	70,000	190,000	266,000	351,000	733,000	643,000	294,000	172,000
14	85,600	71,000	79,000	103,000	75,000	201,000	264,000	351,000	748,000	628,000	288,000	172,000
15	84,500	70,000	77,000	105,000	74,000	203,000	258,000	345,000	763,000	612,000	282,000	169,000
16	83,400	71,000	77,000	101,000	67,000	199,000	252,000	336,000	773,000	592,000	276,000	167,000
17	82,300	67,000	79,000	101,000	69,000	203,000	254,000	331,000	810,000	571,000	268,000	165,000
18	82,300	66,100	80,100	105,000	70,000	226,000	258,000	336,000	880,000	552,000	264,000	164,000
19	83,400	67,000	78,000	105,000	72,000	246,000	264,000	358,000	896,000	532,000	260,000	159,000
20	83,400	68,000	81,200	99,300	70,000	256,000	262,000	400,000	880,000	513,000	256,000	155,000
21	82,300	68,000	79,000	96,700	70,000	258,000	262,000	456,000	858,000	499,000	254,000	154,000
22	81,200	66,100	78,000	95,400	71,000	237,000	260,000	492,000	848,000	489,000	252,000	150,000
23	81,200	64,400	78,000	122,000	73,000	226,000	260,000	504,000	840,000	477,000	248,000	145,000
24	83,400	65,200	78,000	108,000	71,000	226,000	254,000	501,000	850,000	468,000	246,000	142,000
25	81,200	66,100	81,200	110,000	69,000	213,000	254,000	506,000	868,000	456,000	245,000	142,000
26	80,100	66,100	90,400	105,000	71,000	217,000	252,000	525,000	870,000	448,000	243,000	140,000
27	79,000	63,600	85,600	102,000	71,000	213,000	256,000	564,000	858,000	439,000	243,000	134,000
28	80,100	62,800	80,100	98,000	72,000	213,000	262,000	607,000	838,000	429,000	237,000	132,000
29	80,100	62,800	79,000	101,000	-----	213,000	268,000	628,000	813,000	422,000	235,000	128,000
30	78,000	62,800	79,000	115,000	-----	215,000	282,000	663,000	786,000	412,000	228,000	128,000
31	76,000	-----	81,200	116,000	-----	221,000	-----	720,000	-----	403,000	228,000	-----

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1887-88.												
1	126,000	99,300	89,200	88,000	190,000	123,000	129,000	282,000	420,000	451,000	256,000	188,000
2	123,000	99,300	88,000	88,000	179,000	122,000	128,000	288,000	434,000	439,000	252,000	183,000
3	122,000	99,300	91,600	86,800	170,000	119,000	128,000	296,000	453,000	422,000	248,000	177,000
4	120,000	98,000	90,400	84,500	167,000	117,000	131,000	312,000	470,000	420,000	243,000	179,000
5	123,000	98,000	90,400	78,000	162,000	113,000	136,000	321,000	487,000	415,000	239,000	176,000
6	120,000	98,000	92,800	71,000	154,000	113,000	134,000	325,000	304,000	408,000	235,000	174,000
7	120,000	95,400	109,000	68,000	145,000	112,000	136,000	334,000	518,000	400,000	231,000	174,000
8	120,000	95,400	105,000	62,000	140,000	112,000	134,000	336,000	530,000	393,000	228,000	170,000
9	120,000	95,400	101,000	67,400	137,000	106,000	134,000	342,000	535,000	384,000	224,000	169,000
10	122,000	96,700	103,000	56,000	136,000	106,000	134,000	351,000	542,000	374,000	224,000	169,000
11	122,000	96,700	106,000	54,800	136,000	105,000	139,000	370,000	549,000	365,000	221,000	167,000
12	119,000	96,700	112,000	57,400	136,000	106,000	139,000	377,000	549,000	354,000	215,000	164,000
13	119,000	98,000	115,000	58,100	142,000	102,000	140,000	372,000	556,000	345,000	215,000	165,000
14	119,000	98,000	112,000	58,100	142,000	105,000	142,000	367,000	552,000	336,000	213,000	162,000
15	120,000	99,300	110,000	51,800	149,000	108,000	144,000	363,000	559,000	331,000	210,000	159,000
16	117,000	105,000	110,000	49,400	154,000	113,000	160,000	367,000	559,000	327,000	208,000	154,000
17	116,000	110,000	109,000	50,000	150,000	116,000	177,000	384,000	559,000	321,000	204,000	150,000
18	112,000	116,000	103,000	52,400	150,000	120,000	197,000	405,000	564,000	319,000	201,000	149,000
19	116,000	117,000	106,000	53,000	145,000	122,000	212,000	412,000	559,000	312,000	201,000	145,000
20	113,000	112,000	102,000	52,400	142,000	126,000	212,000	408,000	554,000	308,000	201,000	139,000
21	109,000	106,000	101,000	56,000	137,000	137,000	215,000	406,000	547,000	302,000	197,000	137,000
22	108,000	105,000	99,300	58,800	136,000	132,000	224,000	396,000	537,000	296,000	195,000	134,000
23	109,000	102,000	94,100	59,600	132,000	132,000	237,000	386,000	528,000	286,000	194,000	132,000
24	106,000	101,000	92,800	61,200	129,000	137,000	256,000	379,000	516,000	284,000	194,000	131,000
25	105,000	101,000	95,400	67,000	129,000	137,000	272,000	372,000	504,000	280,000	192,000	129,000
26	103,000	99,300	92,800	106,000	128,000	136,000	292,000	368,000	492,000	276,000	192,000	128,000
27	103,000	96,700	95,400	112,000	125,000	129,000	306,000	368,000	484,000	274,000	192,000	126,000
28	102,000	92,800	90,400	132,000	123,000	134,000	306,000	370,000	475,000	270,000	192,000	125,000
29	101,000	90,400	90,400	159,000	123,000	132,000	298,000	374,000	465,000	268,000	192,000	123,000
30	99,300	90,400	89,200	183,000	129,000	129,000	290,000	384,000	458,000	266,000	190,000	120,000
31	99,300	89,200	89,200	215,000	128,000	128,000	403,000	403,000	403,000	262,000	190,000	120,000
1888-89.												
1	119,000	98,000	82,300	76,000	64,400	63,600	110,000	188,000	294,000	213,000	169,000	120,000
2	116,000	108,000	82,300	72,000	64,400	65,200	119,000	190,000	300,000	213,000	167,000	116,000
3	115,000	103,000	81,200	72,000	62,800	65,200	120,000	201,000	300,000	212,000	167,000	116,000
4	115,000	105,000	80,100	67,000	64,400	66,100	123,000	210,000	298,000	210,000	167,000	116,000
5	112,000	102,000	78,000	66,100	62,800	66,100	131,000	217,000	302,000	206,000	170,000	113,000
6	109,000	102,000	79,000	67,000	62,800	67,000	137,000	230,000	296,000	206,000	172,000	109,000
7	103,000	105,000	79,000	67,000	63,600	68,000	139,000	235,000	298,000	201,000	170,000	109,000
8	108,000	101,000	80,100	67,000	63,600	68,000	142,000	231,000	302,000	195,000	170,000	109,000
9	108,000	96,700	82,300	66,100	63,600	69,000	145,000	235,000	300,000	194,000	170,000	108,000
10	108,000	95,400	82,300	67,000	63,600	69,000	142,000	237,000	296,000	188,000	167,000	106,000
11	108,000	94,100	82,300	70,000	63,600	71,000	147,000	235,000	292,000	185,000	165,000	106,000
12	105,000	92,800	88,000	69,000	59,600	73,000	152,000	233,000	288,000	183,000	164,000	101,000
13	106,000	94,100	88,000	67,000	62,800	77,000	152,000	235,000	286,000	179,000	162,000	102,000
14	103,000	94,100	86,800	68,000	64,400	80,100	157,000	235,000	280,000	176,000	155,000	99,300
15	103,000	92,800	85,600	67,000	63,600	83,400	160,000	237,000	272,000	176,000	152,000	95,400
16	103,000	90,400	91,600	64,400	63,600	85,600	167,000	248,000	270,000	172,000	149,000	96,700
17	101,000	91,600	94,100	63,600	63,600	98,000	164,000	266,000	268,000	170,000	145,000	94,100
18	103,000	92,800	90,400	64,400	62,000	105,000	164,000	282,000	264,000	170,000	142,000	91,600
19	96,700	89,200	90,400	65,200	62,800	109,000	162,000	290,000	258,000	169,000	140,000	89,200
20	96,700	88,000	92,800	62,800	57,400	106,000	159,000	288,000	256,000	167,000	140,000	85,600
21	94,100	86,800	92,800	62,800	62,800	110,000	162,000	290,000	248,000	169,000	139,000	86,800
22	94,100	85,600	90,400	64,400	63,600	110,000	162,000	290,000	243,000	167,000	137,000	84,500
23	89,200	86,800	90,400	62,800	62,800	109,000	162,000	284,000	243,000	169,000	136,000	82,300
24	91,600	86,800	89,200	64,400	62,800	110,000	160,000	284,000	239,000	172,000	134,000	82,300
25	91,600	86,800	86,800	67,000	62,000	110,000	169,000	288,000	231,000	172,000	134,000	81,200
26	91,600	85,600	85,600	67,000	62,800	108,000	169,000	288,000	228,000	172,000	131,000	79,000
27	91,600	85,600	85,600	66,100	62,800	105,000	167,000	284,000	224,000	174,000	128,000	78,000
28	92,800	85,600	85,600	65,200	64,400	108,000	170,000	284,000	222,000	172,000	126,000	78,000
29	95,400	82,300	82,300	64,400	64,400	106,000	179,000	282,000	219,000	170,000	123,000	78,000
30	95,400	82,300	80,100	63,600	64,400	108,000	179,000	286,000	215,000	169,000	120,000	79,000
31	94,100	84,500	84,500	63,600	63,600	110,000	190,000	294,000	215,000	170,000	119,000	79,000

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1889-90.												
1.....	79,000	86,800	70,000	56,000	68,000	59,600	145,000	325,000	532,000	381,000	246,000	152,000
2.....	79,000	88,000	69,000	53,000	116,000	62,800	147,000	358,000	513,000	377,000	245,000	149,000
3.....	79,000	86,800	69,000	50,800	179,000	63,600	150,000	393,000	496,000	374,000	239,000	149,000
4.....	81,200	85,600	68,000	48,600	194,000	65,200	152,000	434,000	494,000	372,000	233,000	145,000
5.....	82,300	83,400	69,000	46,300	192,000	67,000	159,000	463,000	482,000	377,000	228,000	144,000
6.....	83,400	82,300	69,000	44,100	194,000	76,000	164,000	477,000	468,000	374,000	222,000	145,000
7.....	83,400	83,400	69,000	41,900	197,000	82,300	172,000	492,000	453,000	372,000	221,000	144,000
8.....	83,400	81,200	68,000	42,800	185,000	92,800	179,000	511,000	444,000	370,000	212,000	142,000
9.....	83,400	79,000	70,000	43,800	169,000	98,000	185,000	542,000	439,000	370,000	204,000	140,000
10.....	84,500	78,000	70,000	44,700	157,000	108,000	188,000	580,000	444,000	372,000	201,000	137,000
11.....	85,600	79,000	69,000	45,600	140,000	132,000	188,000	612,000	451,000	368,000	197,000	137,000
12.....	88,000	76,000	68,000	46,600	125,000	137,000	183,000	619,000	456,000	361,000	197,000	132,000
13.....	85,600	77,000	67,000	47,600	116,000	120,000	185,000	626,000	456,000	356,000	194,000	128,000
14.....	88,000	77,000	67,000	48,400	110,000	119,000	185,000	633,000	446,000	345,000	190,000	126,000
15.....	90,400	77,000	66,100	49,300	105,000	110,000	177,000	621,000	446,000	338,000	190,000	125,000
16.....	92,800	77,000	65,200	50,300	98,000	103,000	174,000	624,000	436,000	334,000	190,000	117,000
17.....	94,100	75,000	63,600	51,200	95,400	103,000	170,000	621,000	429,000	325,000	186,000	116,000
18.....	92,800	76,000	63,600	51,200	91,600	106,000	165,000	626,000	422,000	319,000	186,000	116,000
19.....	95,400	74,000	62,800	53,000	86,800	113,000	165,000	628,000	417,000	314,000	186,000	109,000
20.....	94,100	74,000	62,000	53,600	84,500	120,000	167,000	633,000	415,000	306,000	185,000	109,000
21.....	92,800	74,000	62,000	53,600	81,200	134,000	172,000	626,000	412,000	298,000	185,000	108,000
22.....	92,800	73,000	62,000	54,200	81,200	147,000	185,000	616,000	410,000	290,000	183,000	103,000
23.....	92,800	73,000	62,000	53,600	74,000	154,000	206,000	607,000	405,000	286,000	179,000	99,500
24.....	91,600	74,000	61,200	52,400	75,000	176,000	222,000	602,000	398,000	280,000	176,000	98,000
25.....	91,600	73,000	60,400	53,000	76,000	174,000	237,000	590,000	393,000	276,000	174,000	96,700
26.....	88,000	74,000	59,800	54,200	70,000	179,000	245,000	580,000	391,000	272,000	170,000	96,700
27.....	85,600	73,000	59,600	55,400	65,200	176,000	252,000	580,000	388,000	268,000	167,000	95,400
28.....	88,000	72,000	59,600	56,700	62,000	170,000	264,000	578,000	393,000	266,000	164,000	94,100
29.....	88,000	71,000	58,100	59,600	.....	160,000	278,000	580,000	393,000	256,000	160,000	90,400
30.....	88,000	69,000	56,000	67,000	.....	154,000	300,000	573,000	388,000	256,000	157,000	90,400
31.....	88,000	.....	54,800	65,200	.....	144,000	.....	556,000	.....	248,000	157,000	.....
1890-91.												
1.....	90,400	84,500	70,000	68,000	71,000	67,000	102,000	222,000	446,000	370,000	248,000	159,000
2.....	88,000	83,400	74,000	68,000	70,000	65,200	96,700	231,000	448,000	363,000	250,000	154,000
3.....	88,000	82,300	72,000	70,000	66,100	60,400	95,400	231,000	446,000	354,000	248,000	149,000
4.....	89,200	78,000	72,000	72,000	64,400	58,800	90,400	235,000	444,000	347,000	246,000	152,000
5.....	89,200	83,400	72,000	70,000	64,400	57,400	89,200	239,000	444,000	342,000	243,000	150,000
6.....	91,600	82,300	72,000	69,000	62,800	58,100	89,200	245,000	441,000	338,000	241,000	149,000
7.....	90,400	80,100	74,000	71,000	62,000	61,200	88,000	250,000	441,000	331,000	235,000	147,000
8.....	95,400	81,200	73,000	70,000	62,000	60,400	94,100	272,000	441,000	329,000	235,000	145,000
9.....	94,100	80,100	72,000	69,000	59,600	58,800	96,700	296,000	441,000	325,000	230,000	144,000
10.....	94,100	79,000	72,000	69,000	60,400	62,000	98,000	312,000	434,000	325,000	224,000	142,000
11.....	91,600	79,000	72,000	68,000	59,600	62,800	102,000	317,000	429,000	325,000	221,000	140,000
12.....	94,100	79,000	70,000	65,200	61,200	62,000	105,000	308,000	422,000	325,000	217,000	137,000
13.....	94,100	76,000	69,000	65,200	60,400	61,200	106,000	302,000	412,000	321,000	215,000	136,000
14.....	90,400	80,100	67,000	63,600	61,200	62,800	105,000	308,000	405,000	319,000	210,000	134,000
15.....	91,600	78,000	68,000	62,000	62,000	63,600	112,000	319,000	405,000	314,000	206,000	132,000
16.....	90,400	77,000	67,000	61,200	60,400	64,400	119,000	336,000	415,000	310,000	204,000	132,000
17.....	90,400	77,000	67,000	62,000	61,200	67,000	123,000	358,000	417,000	302,000	199,000	131,000
18.....	88,000	79,000	66,100	60,400	60,400	67,000	134,000	381,000	412,000	294,000	195,000	129,000
19.....	86,800	77,000	66,100	61,200	61,200	68,000	142,000	405,000	408,000	288,000	192,000	126,000
20.....	86,800	75,000	67,000	63,600	63,600	77,000	150,000	427,000	408,000	284,000	188,000	123,000
21.....	85,600	77,000	66,100	62,800	62,800	86,800	162,000	427,000	412,000	282,000	188,000	120,000
22.....	84,500	74,000	69,000	62,800	62,000	92,800	172,000	420,000	412,000	280,000	185,000	116,000
23.....	84,500	74,000	69,000	62,000	61,200	90,400	183,000	428,000	415,000	278,000	179,000	116,000
24.....	83,400	74,000	70,000	63,600	60,400	90,400	186,000	400,000	412,000	276,000	177,000	116,000
25.....	86,800	73,000	65,200	63,600	65,800	89,200	195,000	396,000	408,000	274,000	179,000	116,000
26.....	85,600	73,000	71,000	64,400	60,400	90,400	206,000	398,000	408,000	274,000	174,000	113,000
27.....	88,000	73,000	70,000	67,000	64,400	88,000	213,000	410,000	400,000	270,000	170,000	113,000
28.....	89,200	73,000	69,000	66,100	70,000	90,400	219,000	422,000	393,000	264,000	167,000	113,000
29.....	89,200	73,000	69,000	65,200	.....	95,400	217,000	434,000	388,000	258,000	164,000	109,000
30.....	85,600	73,000	70,000	67,000	.....	98,000	215,000	441,000	379,000	256,000	159,000	108,000
31.....	84,500	.....	70,000	69,000	.....	108,000	.....	441,000	.....	254,000	159,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891-92.												
1.....	108,000	84,500	110,000	89,200	66,900	84,700	136,000	166,000	560,000	583,000	278,000	159,000
2.....	102,000	84,500	108,000	91,600	66,900	85,600	136,000	168,000	543,000	583,000	267,000	156,000
3.....	102,000	92,800	109,000	95,400	66,200	86,500	136,000	169,000	524,000	581,000	260,000	155,000
4.....	101,000	95,400	108,000	92,800	66,200	90,100	136,000	174,000	513,000	581,000	252,000	155,000
5.....	99,300	95,400	108,000	95,400	66,900	90,100	132,000	176,000	501,000	574,000	249,000	154,000
6.....	98,000	95,400	106,000	91,600	66,900	90,100	132,000	176,000	491,000	568,000	246,000	154,000
7.....	96,700	102,000	102,000	88,000	67,900	92,000	129,000	177,000	483,000	566,000	246,000	151,000
8.....	94,100	109,000	112,000	85,600	66,900	91,000	128,000	181,000	481,000	553,000	243,000	151,000
9.....	90,400	109,000	109,000	83,400	67,600	92,000	129,000	190,000	497,000	547,000	239,000	151,000
10.....	91,600	119,000	103,000	82,300	67,600	92,000	129,000	195,000	505,000	534,000	234,000	150,000
11.....	89,200	119,000	98,000	77,000	68,300	101,000	130,000	206,000	507,000	522,000	230,000	148,000
12.....	89,200	122,000	94,100	72,000	70,600	110,000	136,000	218,000	493,000	507,000	223,000	148,000
13.....	86,800	132,000	94,100	69,000	73,800	116,000	147,000	245,000	511,000	491,000	220,000	147,000
14.....	84,500	128,000	96,700	68,000	75,400	123,000	157,000	257,000	518,000	481,000	216,000	146,000
15.....	84,500	128,000	96,700	71,000	77,000	130,000	157,000	258,000	528,000	467,000	209,000	143,000
16.....	84,500	128,000	92,800	73,000	78,600	141,000	157,000	258,000	536,000	457,000	209,000	142,000
17.....	84,500	115,000	92,800	75,000	77,400	147,000	172,000	258,000	555,000	447,000	202,000	142,000
18.....	82,300	110,000	94,100	76,000	76,200	154,000	172,000	267,000	566,000	435,000	198,000	141,000
19.....	81,200	108,000	92,800	77,000	74,600	160,000	172,000	284,000	576,000	403,000	195,000	140,000
20.....	82,300	105,000	95,400	78,000	73,400	163,000	169,000	300,000	596,000	388,000	192,000	140,000
21.....	82,300	108,000	95,400	76,000	72,200	163,000	169,000	315,000	596,000	376,000	188,000	141,000
22.....	81,200	105,000	94,100	78,000	74,600	157,000	165,000	327,000	607,000	367,000	184,000	142,000
23.....	81,200	103,000	101,000	76,000	73,000	163,000	163,000	349,000	607,000	358,000	181,000	142,000
24.....	81,200	103,000	99,300	76,000	74,600	163,000	164,000	386,000	594,000	347,000	178,000	141,000
25.....	82,300	102,000	95,400	75,000	75,400	164,000	173,000	432,000	585,000	335,000	178,000	137,000
26.....	80,100	106,000	94,100	72,000	77,000	157,000	177,000	463,000	564,000	323,000	176,000	136,000
27.....	81,200	101,000	108,000	71,000	84,700	152,000	177,000	493,000	562,000	311,000	169,000	136,000
28.....	82,300	103,000	105,000	71,000	84,700	148,000	173,000	507,000	564,000	303,000	165,000	135,000
29.....	82,300	105,000	96,700	71,000	84,700	144,000	169,000	524,000	568,000	294,000	163,000	134,000
30.....	85,600	109,000	91,600	74,000	.....	141,000	168,000	545,000	578,000	289,000	160,000	131,000
31.....	85,600	.....	90,400	77,000	.....	140,000	.....	568,000	.....	281,000	160,000	.....
1892-93.												
1.....	131,000	95,000	99,000	93,000	63,400	66,900	130,000	252,000	568,000	528,000	381,000	181,000
2.....	129,000	95,000	97,000	92,000	63,400	65,500	159,000	263,000	570,000	522,000	372,000	181,000
3.....	128,000	95,000	97,000	89,200	62,700	64,800	165,000	267,000	572,000	505,000	363,000	176,000
4.....	124,000	94,000	98,000	86,500	62,000	64,100	157,000	267,000	572,000	501,000	356,000	172,000
5.....	121,000	93,000	99,000	86,500	61,300	63,400	160,000	272,000	570,000	499,000	349,000	168,000
6.....	121,000	93,000	97,000	83,800	66,900	63,400	164,000	284,000	574,000	497,000	335,000	164,000
7.....	118,000	94,000	95,000	82,000	75,400	63,400	165,000	284,000	578,000	493,000	327,000	163,000
8.....	118,000	94,000	92,000	81,100	82,900	64,100	181,000	294,000	596,000	485,000	323,000	160,000
9.....	120,000	93,000	93,000	80,200	87,400	64,200	187,000	297,000	622,000	471,000	320,000	159,000
10.....	118,000	92,000	92,000	79,400	93,000	65,500	185,000	323,000	644,000	461,000	316,000	157,000
11.....	117,000	92,000	91,000	78,600	100,000	66,200	173,000	345,000	653,000	461,000	311,000	157,000
12.....	116,000	93,000	86,500	77,800	104,000	65,500	170,000	372,000	655,000	465,000	308,000	160,000
13.....	114,000	91,000	85,600	77,000	105,000	64,200	161,000	394,000	668,000	473,000	302,000	159,000
14.....	112,000	91,000	82,900	75,400	103,000	65,500	159,000	407,000	679,000	491,000	291,000	156,000
15.....	112,000	97,000	82,000	74,600	97,000	65,500	150,000	426,000	671,000	481,000	279,000	154,000
16.....	110,000	105,000	78,600	74,600	96,000	64,800	146,000	455,000	651,000	471,000	267,000	156,000
17.....	107,000	103,000	77,800	73,800	95,000	65,500	141,000	489,000	629,000	467,000	264,000	155,000
18.....	105,000	97,000	77,000	73,800	94,000	64,800	137,000	526,000	616,000	465,000	254,000	143,000
19.....	104,000	94,000	76,200	73,000	85,600	65,500	138,000	581,000	611,000	463,000	249,000	141,000
20.....	103,000	91,000	75,400	73,000	78,600	65,500	135,000	609,000	616,000	461,000	243,000	140,000
21.....	103,000	93,000	73,800	72,200	78,600	65,500	140,000	613,000	613,000	461,000	233,000	137,000
22.....	102,000	99,000	73,000	71,400	77,800	66,200	143,000	605,000	602,000	455,000	226,000	135,000
23.....	101,000	118,000	71,400	70,600	79,400	72,200	151,000	594,000	578,000	451,000	218,000	132,000
24.....	101,000	116,000	70,600	73,800	81,100	73,000	169,000	581,000	564,000	447,000	213,000	130,000
25.....	102,000	110,000	69,000	81,100	78,600	73,800	188,000	574,000	553,000	441,000	209,000	129,000
26.....	103,000	107,000	72,200	77,800	77,800	76,200	206,000	566,000	545,000	439,000	202,000	130,000
27.....	101,000	104,000	91,000	73,800	77,000	77,800	222,000	555,000	539,000	432,000	198,000	126,000
28.....	99,000	103,000	92,000	72,200	70,600	84,700	234,000	547,000	539,000	422,000	197,000	123,000
29.....	98,000	102,000	95,000	71,400	.....	94,000	246,000	539,000	539,000	407,000	194,000	121,000
30.....	97,000	101,000	92,000	70,600	.....	104,000	249,000	543,000	534,000	395,000	190,000	120,000
31.....	96,000	.....	93,000	69,800	.....	115,000	.....	555,000	.....	390,000	185,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893-94.												
1.....	117,000	110,000	165,000	120,000	142,000	115,000	322,000	461,000	1,040,000	716,000	372,000	217,000
2.....	115,000	108,000	180,000	121,000	138,000	114,000	311,000	451,000	1,060,000	706,000	361,000	215,000
3.....	114,000	107,000	185,000	123,000	132,000	120,000	299,000	432,000	1,100,000	700,000	347,000	215,000
4.....	113,000	112,000	199,000	116,000	123,000	118,000	297,000	416,000	1,120,000	684,000	338,000	212,000
5.....	112,000	112,000	191,000	115,000	123,000	118,000	291,000	409,000	1,140,000	679,000	329,000	206,000
6.....	114,000	112,000	181,000	112,000	124,000	118,000	275,000	395,000	1,160,000	675,000	319,000	204,000
7.....	113,000	118,000	177,000	107,000	118,000	113,000	270,000	407,000	1,150,000	666,000	312,000	204,000
8.....	125,000	140,000	176,000	107,000	124,000	115,000	266,000	422,000	1,150,000	662,000	306,000	199,000
9.....	126,000	168,000	174,000	104,000	124,000	114,000	279,000	437,000	1,140,000	651,000	300,000	195,000
10.....	130,000	170,000	181,000	103,000	124,000	114,000	292,000	409,000	1,130,000	629,000	294,000	194,000
11.....	136,000	168,000	180,000	102,000	124,000	117,000	283,000	441,000	1,090,000	618,000	288,000	188,000
12.....	148,000	166,000	209,000	102,000	124,000	117,000	302,000	435,000	1,070,000	607,000	284,000	185,000
13.....	150,000	165,000	218,000	108,000	123,000	115,000	323,000	437,000	1,040,000	596,000	278,000	179,000
14.....	137,000	161,000	209,000	136,000	117,000	118,000	325,000	439,000	1,010,000	581,000	272,000	176,000
15.....	132,000	155,000	192,000	157,000	114,000	136,000	328,000	461,000	971,000	568,000	266,000	170,000
16.....	132,000	157,000	176,000	180,000	114,000	168,000	330,000	491,000	943,000	555,000	260,000	169,000
17.....	128,000	155,000	164,000	202,000	113,000	216,000	322,000	518,000	920,000	543,000	254,000	165,000
18.....	125,000	152,000	164,000	219,000	110,000	252,000	307,000	528,000	907,000	526,000	248,000	164,000
19.....	123,000	147,000	160,000	213,000	110,000	245,000	291,000	522,000	902,000	518,000	245,000	162,000
20.....	125,000	144,000	155,000	199,000	105,000	242,000	283,000	522,000	893,000	501,000	239,000	162,000
21.....	124,000	142,000	148,000	185,000	103,000	232,000	279,000	558,000	884,000	489,000	235,000	155,000
22.....	123,000	141,000	152,000	180,000	102,000	202,000	283,000	616,000	872,000	477,000	233,000	154,000
23.....	122,000	140,000	147,000	166,000	101,000	178,000	308,000	646,000	849,000	463,000	230,000	150,000
24.....	118,000	140,000	144,000	161,000	92,000	163,000	340,000	690,000	842,000	453,000	230,000	149,000
25.....	118,000	140,000	142,000	156,000	90,100	160,000	337,000	732,000	831,000	441,000	228,000	149,000
26.....	116,000	141,000	140,000	159,000	88,300	155,000	377,000	785,000	822,000	432,000	224,000	149,000
27.....	114,000	141,000	137,000	155,000	95,000	160,000	409,000	844,000	803,000	422,000	222,000	145,000
28.....	111,000	141,000	136,000	152,000	107,000	174,000	430,000	918,000	785,000	412,000	222,000	142,000
29.....	108,000	142,000	132,000	148,000	.....	208,000	465,000	960,000	762,000	403,000	221,000	139,000
30.....	110,000	155,000	128,000	144,000	.....	249,000	463,000	1,010,000	739,000	385,000	219,000	137,000
31.....	110,000	.....	118,000	142,000	.....	284,000	.....	1,020,000	.....	376,000	.....	.....
1894-95.												
1.....	136,000	132,000	140,000	83,400	91,600	131,000	143,000	281,000	459,000	370,000	260,000	149,000
2.....	134,000	131,000	139,000	83,400	92,800	137,000	146,000	286,000	443,000	374,000	254,000	147,000
3.....	132,000	136,000	137,000	88,000	92,800	136,000	146,000	292,000	430,000	377,000	251,000	145,000
4.....	132,000	136,000	134,000	82,300	91,600	136,000	150,000	305,000	418,000	379,000	248,000	144,000
5.....	129,000	136,000	131,000	81,200	91,600	131,000	148,000	320,000	405,000	381,000	242,000	142,000
6.....	132,000	139,000	125,000	83,400	94,100	128,000	147,000	334,000	401,000	383,000	239,000	140,000
7.....	134,000	139,000	125,000	85,600	90,400	125,000	150,000	347,000	395,000	388,000	239,000	139,000
8.....	132,000	136,000	123,000	82,300	90,400	122,000	148,000	352,000	397,000	392,000	237,000	137,000
9.....	136,000	132,000	123,000	82,300	89,200	122,000	148,000	361,000	399,000	390,000	230,000	137,000
10.....	139,000	139,000	125,000	85,600	89,200	121,000	147,000	365,000	392,000	385,000	229,000	137,000
11.....	139,000	147,000	123,000	89,200	88,000	122,000	147,000	365,000	386,000	381,000	227,000	139,000
12.....	139,000	150,000	123,000	98,000	86,800	120,000	150,000	388,000	381,000	379,000	223,000	136,000
13.....	137,000	149,000	125,000	123,000	85,600	116,000	156,000	356,000	379,000	377,000	222,000	136,000
14.....	136,000	139,000	116,000	120,000	84,500	116,000	161,000	349,000	379,000	372,000	220,000	134,000
15.....	136,000	142,000	116,000	119,000	81,200	120,000	164,000	349,000	379,000	370,000	220,000	132,000
16.....	136,000	137,000	115,000	131,000	80,100	117,000	172,000	359,000	379,000	367,000	216,000	132,000
17.....	131,000	132,000	112,000	131,000	80,100	112,000	183,000	377,000	379,000	363,000	211,000	132,000
18.....	130,000	129,000	109,000	123,000	84,500	112,000	184,000	383,000	372,000	358,000	206,000	131,000
19.....	128,000	132,000	108,000	122,000	84,500	110,000	191,000	383,000	367,000	356,000	202,000	131,000
20.....	128,000	131,000	106,000	119,000	86,800	107,000	195,000	386,000	356,000	349,000	195,000	125,000
21.....	125,000	129,000	103,000	116,000	89,200	106,000	197,000	394,000	347,000	342,000	184,000	122,000
22.....	125,000	129,000	103,000	113,000	92,800	106,000	201,000	403,000	344,000	332,000	180,000	117,000
23.....	128,000	129,000	102,000	112,000	98,000	105,000	204,000	422,000	342,000	323,000	174,000	115,000
24.....	132,000	132,000	103,000	112,000	105,000	106,000	206,000	428,000	344,000	318,000	170,000	112,000
25.....	134,000	136,000	103,000	110,000	111,000	107,000	212,000	430,000	345,000	307,000	168,000	110,000
26.....	132,000	137,000	102,000	108,000	120,000	107,000	219,000	428,000	352,000	295,000	164,000	110,000
27.....	131,000	134,000	99,300	106,000	129,000	107,000	236,000	422,000	358,000	286,000	159,000	109,000
28.....	132,000	136,000	99,300	101,000	132,000	115,000	254,000	428,000	363,000	278,000	155,000	108,000
29.....	132,000	139,000	96,700	96,700	.....	123,000	267,000	457,000	365,000	273,000	151,000	109,000
30.....	134,000	139,000	88,000	96,700	.....	130,000	276,000	471,000	367,000	269,000	151,000	109,000
31.....	132,000	.....	90,400	91,600	.....	137,000	.....	475,000	.....	264,000	148,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.....	106,000	84,500	74,000	77,000	103,000	130,000	195,000	205,000	481,000	771,000	372,000	191,000
2.....	106,000	84,500	76,000	76,000	103,000	125,000	183,000	206,000	534,000	778,000	358,000	187,000
3.....	106,000	85,600	78,000	72,000	102,000	123,000	172,000	208,000	568,000	771,000	347,000	187,000
4.....	105,000	83,400	77,000	70,000	102,000	118,000	161,000	212,000	585,000	771,000	335,000	185,000
5.....	103,000	82,300	75,000	70,000	101,000	113,000	157,000	218,000	605,000	762,000	323,000	187,000
6.....	103,000	82,300	75,000	73,000	99,300	111,000	155,000	226,000	618,000	757,000	313,000	188,000
7.....	103,000	80,100	76,000	74,000	96,700	107,000	152,000	290,000	627,000	752,000	307,000	190,000
8.....	99,300	80,100	76,000	78,000	92,500	106,000	155,000	249,000	635,000	752,000	302,000	185,000
9.....	99,300	79,000	73,000	82,300	87,400	105,000	157,000	254,000	631,000	750,000	294,000	180,000
10.....	101,000	78,000	76,000	81,200	87,400	103,000	168,000	251,000	631,000	743,000	284,000	178,000
11.....	99,300	79,000	77,000	83,400	86,800	103,000	170,000	252,000	642,000	736,000	273,000	177,000
12.....	98,000	78,000	74,000	83,400	84,500	103,000	170,000	254,000	655,000	732,000	267,000	174,000
13.....	98,000	78,000	79,000	83,400	83,400	103,000	176,000	254,000	655,000	718,000	261,000	170,000
14.....	98,000	77,000	79,000	85,600	85,600	105,000	183,000	258,000	651,000	704,000	258,000	166,000
15.....	96,700	78,000	78,000	83,400	84,500	107,000	191,000	263,000	664,000	695,000	252,000	168,000
16.....	95,400	78,000	78,000	78,000	84,500	107,000	205,000	261,000	679,000	682,000	248,000	165,000
17.....	95,400	76,000	77,000	78,000	84,500	106,000	206,000	260,000	702,000	666,000	239,000	159,000
18.....	95,400	78,000	77,000	70,000	85,600	105,000	206,000	255,000	720,000	646,000	232,000	155,000
19.....	94,100	79,000	77,000	81,200	81,100	106,000	201,000	251,000	739,000	629,000	226,000	148,000
20.....	92,800	77,000	77,000	85,600	82,000	110,000	194,000	249,000	757,000	609,000	223,000	143,000
21.....	92,800	79,000	74,000	110,000	82,900	118,000	187,000	249,000	773,000	589,000	219,000	139,000
22.....	92,800	79,000	73,000	125,000	84,700	126,000	181,000	252,000	785,000	568,000	212,000	135,000
23.....	92,800	77,000	70,000	119,000	84,700	143,000	176,000	254,000	778,000	551,000	208,000	133,000
24.....	92,800	77,000	72,000	122,000	85,600	161,000	174,000	261,000	764,000	530,000	209,000	129,000
25.....	92,800	76,000	72,000	120,000	88,300	181,000	177,000	279,000	755,000	511,000	205,000	125,000
26.....	92,800	76,000	71,000	113,000	99,000	205,000	180,000	302,000	748,000	491,000	204,000	120,000
27.....	91,600	75,000	73,000	110,000	104,000	212,000	184,000	334,000	743,000	469,000	204,000	114,000
28.....	89,200	74,000	78,000	108,000	115,000	209,000	194,000	352,000	739,000	447,000	195,000	114,000
29.....	89,200	74,000	75,000	103,000	123,000	206,000	199,000	374,000	750,000	424,000	192,000	114,000
30.....	85,600	74,000	73,000	102,000	.....	206,000	202,000	394,000	759,000	405,000	191,000	114,000
31.....	84,500	.....	73,000	102,000	.....	206,000	.....	426,000	.....	386,000	191,000	.....
1896-97.												
1.....	110,000	78,000	106,000	134,000	99,300	98,000	130,000	471,000	739,000	441,000	255,000	188,000
2.....	106,000	78,000	103,000	134,000	101,000	95,400	135,000	457,000	736,000	439,000	248,000	183,000
3.....	105,000	78,000	102,000	134,000	105,000	98,000	140,000	449,000	713,000	437,000	239,000	178,000
4.....	103,000	79,000	102,000	134,000	108,000	98,000	143,000	447,000	688,000	437,000	236,000	173,000
5.....	102,000	79,000	149,000	129,000	112,000	102,000	148,000	453,000	662,000	445,000	233,000	170,000
6.....	99,300	80,100	149,000	128,000	123,000	103,000	155,000	477,000	642,000	451,000	225,000	168,000
7.....	98,000	79,000	167,000	128,000	126,000	103,000	161,000	513,000	627,000	449,000	223,000	165,000
8.....	95,400	88,000	183,000	123,000	131,000	102,000	168,000	560,000	611,000	441,000	222,000	163,000
9.....	95,400	95,400	176,000	119,000	137,000	99,300	174,000	581,000	598,000	433,000	216,000	160,000
10.....	94,100	92,800	170,000	116,000	136,000	96,700	185,000	581,000	587,000	424,000	213,000	157,000
11.....	92,800	97,000	172,000	116,000	140,000	96,700	199,000	564,000	583,000	422,000	209,000	152,000
12.....	94,100	101,000	185,000	115,000	155,000	94,100	212,000	541,000	562,000	418,000	209,000	147,000
13.....	91,600	107,000	212,000	113,000	140,000	94,100	233,000	526,000	539,000	409,000	205,000	143,000
14.....	89,200	116,000	203,000	112,000	140,000	91,600	245,000	530,000	520,000	394,000	204,000	140,000
15.....	88,000	129,000	206,000	106,000	144,000	88,000	255,000	555,000	511,000	388,000	202,000	134,000
16.....	86,800	140,000	204,000	103,000	155,000	84,500	273,000	600,000	501,000	376,000	201,000	126,000
17.....	84,500	152,000	204,000	101,000	145,000	89,200	294,000	642,000	493,000	368,000	204,000	123,000
18.....	85,600	178,000	194,000	99,300	136,000	88,000	328,000	675,000	475,000	359,000	202,000	122,000
19.....	85,600	194,000	188,000	98,000	131,000	86,800	374,000	706,000	459,000	352,000	202,000	121,000
20.....	83,400	180,000	181,000	101,000	126,000	88,000	416,000	732,000	453,000	349,000	201,000	118,000
21.....	83,400	170,000	176,000	103,000	117,000	88,000	469,000	734,000	451,000	345,000	199,000	117,000
22.....	82,300	163,000	167,000	105,000	116,000	88,000	501,000	752,000	445,000	335,000	198,000	116,000
23.....	81,200	155,000	160,000	106,000	108,000	88,000	493,000	776,000	445,000	323,000	198,000	114,000
24.....	80,100	148,000	157,000	109,000	103,000	92,800	479,000	780,000	449,000	315,000	197,000	113,000
25.....	79,000	143,000	154,000	120,000	102,000	101,000	447,000	771,000	455,000	307,000	195,000	110,000
26.....	80,100	144,000	150,000	128,000	99,300	108,000	426,000	764,000	459,000	297,000	194,000	107,000
27.....	79,000	146,000	147,000	120,000	98,000	131,000	416,000	757,000	455,000	292,000	197,000	105,000
28.....	79,000	134,000	144,000	113,000	98,000	162,000	428,000	757,000	455,000	287,000	198,000	104,000
29.....	78,000	112,000	140,000	109,000	.....	.....	199,000	743,000	449,000	278,000	195,000	103,000
30.....	78,000	109,000	137,000	102,000	.....	.....	208,000	732,000	447,000	272,000	197,000	102,000
31.....	78,000	.....	139,000	99,300	.....	.....	203,000	730,000	.....	263,000	192,000	.....

Daily discharge, in second-feet, of Columbia River at Dalles, The Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1	101,000	84,700	140,000	155,000	83,800	154,000	111,000	334,000	602,000	541,000	291,000	199,000
2	104,000	84,700	136,000	154,000	82,900	154,000	111,000	334,000	603,000	524,000	283,000	197,000
3	101,000	83,800	134,000	150,000	84,700	156,000	112,000	332,000	596,000	518,000	279,000	192,000
4	101,000	82,900	134,000	140,000	84,700	159,000	113,000	328,000	585,000	501,000	270,000	188,000
5	102,000	82,000	138,000	135,000	85,600	157,000	116,000	334,000	572,000	485,000	261,000	183,000
6	103,000	82,900	140,000	134,000	93,000	161,000	118,000	340,000	562,000	473,000	257,000	174,000
7	104,000	83,800	148,000	132,000	103,000	164,000	122,000	345,000	553,000	455,000	255,000	170,000
8	105,000	84,700	152,000	129,000	100,000	168,000	129,000	349,000	551,000	445,000	254,000	165,000
9	106,000	85,600	152,000	128,000	103,000	166,000	138,000	350,000	558,000	437,000	251,000	161,000
10	104,000	85,600	154,000	125,000	111,000	176,000	143,000	350,000	547,000	426,000	246,000	152,000
11	104,000	86,500	163,000	121,000	121,000	181,000	148,000	350,000	587,000	420,000	246,000	146,000
12	103,000	91,000	165,000	116,000	126,000	176,000	154,000	356,000	602,000	412,000	243,000	143,000
13	102,000	94,000	161,000	113,000	129,000	169,000	163,000	367,000	613,000	403,000	242,000	142,000
14	101,000	97,000	168,000	107,000	136,000	164,000	166,000	386,000	627,000	392,000	240,000	137,000
15	99,000	107,000	165,000	107,000	146,000	159,000	180,000	399,000	633,000	385,000	242,000	134,000
16	98,000	114,000	151,000	107,000	176,000	154,000	209,000	411,000	640,000	377,000	237,000	130,000
17	97,000	115,000	150,000	106,000	223,000	148,000	215,000	424,000	646,000	376,000	237,000	128,000
18	96,000	121,000	148,000	105,000	260,000	146,000	240,000	441,000	646,000	372,000	234,000	126,000
19	96,000	128,000	142,000	106,000	245,000	147,000	248,000	467,000	646,000	372,000	232,000	124,000
20	95,000	123,000	137,000	108,000	223,000	147,000	252,000	481,000	649,000	370,000	229,000	122,000
21	94,000	126,000	130,000	105,000	206,000	138,000	249,000	491,000	649,000	368,000	227,000	121,000
22	94,000	148,000	128,000	103,000	191,000	134,000	249,000	491,000	646,000	365,000	223,000	121,000
23	93,000	165,000	123,000	102,000	180,000	131,000	255,000	481,000	635,000	359,000	218,000	118,000
24	92,000	164,000	118,000	98,000	174,000	128,000	261,000	471,000	620,000	349,000	213,000	116,000
25	91,000	155,000	118,000	96,000	160,000	122,000	272,000	469,000	611,000	349,000	209,000	116,000
26	90,100	152,000	117,000	95,000	165,000	122,000	281,000	473,000	598,000	340,000	209,000	116,000
27	89,200	151,000	120,000	92,000	155,000	122,000	287,000	475,000	596,000	327,000	205,000	117,000
28	88,300	148,000	128,000	88,000	156,000	122,000	320,000	487,000	587,000	320,000	202,000	118,000
29	87,400	144,000	131,000	87,400	118,000	118,000	337,000	526,000	570,000	311,000	204,000	117,000
30	86,500	142,000	132,000	86,500	116,000	116,000	337,000	574,000	570,000	307,000	204,000	118,000
31	85,600	142,000	142,000	84,700	113,000	113,000	594,000	594,000	594,000	300,000	202,000	118,000
1898-99.												
1	114,000	84,700	84,700	87,400	117,000	113,000	123,000	223,000	471,000	725,000	435,000	230,000
2	113,000	84,700	82,900	83,800	116,000	111,000	121,000	218,000	477,000	727,000	422,000	225,000
3	112,000	85,600	80,200	78,600	112,000	107,000	120,000	211,000	483,000	727,000	409,000	219,000
4	112,000	86,500	77,800	77,000	117,000	106,000	122,000	208,000	511,000	718,000	394,000	213,000
5	110,000	86,500	77,800	75,400	113,000	104,000	124,000	205,000	539,000	711,000	385,000	209,000
6	107,000	86,500	75,400	74,600	95,000	100,000	131,000	202,000	574,000	704,000	372,000	205,000
7	105,000	85,600	73,000	73,800	91,000	101,000	134,000	201,000	585,000	695,000	363,000	204,000
8	103,000	86,500	69,800	72,200	82,000	100,000	136,000	208,000	576,000	684,000	350,000	199,000
9	103,000	85,600	68,300	71,400	80,200	104,000	144,000	229,000	558,000	677,000	339,000	198,000
10	101,000	84,700	66,200	71,400	96,000	102,000	151,000	254,000	545,000	675,000	332,000	198,000
11	100,000	83,800	64,100	72,200	103,000	104,000	165,000	287,000	553,000	671,000	322,000	197,000
12	99,000	82,000	63,400	73,800	101,000	106,000	184,000	327,000	574,000	666,000	313,000	195,000
13	98,000	79,400	59,900	78,600	104,000	107,000	192,000	340,000	629,000	657,000	313,000	195,000
14	97,000	78,600	59,900	84,700	108,000	104,000	218,000	349,000	668,000	646,000	305,000	194,000
15	97,000	78,600	59,200	85,600	118,000	100,000	242,000	347,000	657,000	638,000	299,000	191,000
16	96,000	79,400	58,600	89,200	117,000	98,000	232,000	335,000	635,000	631,000	291,000	188,000
17	93,000	80,200	55,000	92,000	117,000	96,000	225,000	322,000	624,000	622,000	284,000	188,000
18	95,000	82,900	58,000	93,000	116,000	95,000	229,000	316,000	638,000	613,000	281,000	188,000
19	94,000	82,900	63,400	95,000	117,000	94,000	230,000	315,000	684,000	600,000	276,000	187,000
20	93,000	83,800	66,900	97,000	124,000	96,000	226,000	315,000	739,000	591,000	269,000	187,000
21	92,000	84,700	71,400	116,000	118,000	99,000	229,000	311,000	773,000	583,000	266,000	191,000
22	91,000	84,700	70,600	128,000	124,000	101,000	222,000	311,000	787,000	570,000	264,000	188,000
23	92,000	87,400	67,600	121,000	130,000	106,000	220,000	313,000	769,000	558,000	260,000	185,000
24	90,100	85,600	66,200	136,000	120,000	107,000	223,000	315,000	741,000	549,000	255,000	185,000
25	89,200	82,900	65,500	142,000	116,000	107,000	223,000	332,000	716,000	532,000	254,000	180,000
26	87,400	81,100	65,500	136,000	107,000	110,000	225,000	367,000	709,000	511,000	252,000	177,000
27	89,200	81,100	65,500	128,000	105,000	113,000	230,000	411,000	723,000	497,000	248,000	176,000
28	88,300	82,900	69,000	130,000	101,000	117,000	245,000	437,000	739,000	483,000	242,000	173,000
29	85,600	83,800	68,300	130,000	124,000	124,000	245,000	451,000	741,000	473,000	239,000	170,000
30	85,600	86,500	64,800	131,000	126,000	126,000	237,000	457,000	732,000	459,000	236,000	168,000
31	86,500	81,100	129,000	125,000	125,000	125,000	469,000	469,000	447,000	232,000	232,000	168,000

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899-1900.												
1.....	168,000	122,000	172,000	143,000	138,000	136,000	216,000	291,000	432,000	437,000	239,000	157,000
2.....	165,000	121,000	192,000	143,000	138,000	134,000	216,000	294,000	424,000	437,000	237,000	156,000
3.....	161,000	121,000	194,000	142,000	137,000	132,000	218,000	300,000	414,000	435,000	236,000	156,000
4.....	157,000	120,000	192,000	143,000	134,000	134,000	223,000	315,000	412,000	428,000	232,000	155,000
5.....	155,000	121,000	190,000	142,000	130,000	134,000	232,000	335,000	411,000	422,000	227,000	152,000
6.....	154,000	118,000	184,000	141,000	129,000	135,000	245,000	359,000	412,000	416,000	226,000	148,000
7.....	151,000	116,000	174,000	142,000	128,000	138,000	257,000	383,000	418,000	405,000	220,000	147,000
8.....	150,000	113,000	172,000	143,000	125,000	150,000	263,000	407,000	418,000	392,000	219,000	144,000
9.....	144,000	113,000	169,000	143,000	125,000	151,000	270,000	422,000	420,000	379,000	216,000	143,000
10.....	142,000	114,000	168,000	144,000	124,000	155,000	279,000	437,000	418,000	367,000	209,000	142,000
11.....	140,000	115,000	168,000	146,000	124,000	168,000	283,000	445,000	416,000	352,000	201,000	140,000
12.....	136,000	115,000	166,000	150,000	123,000	176,000	284,000	471,000	409,000	340,000	197,000	137,000
13.....	136,000	115,000	163,000	165,000	122,000	178,000	276,000	491,000	401,000	332,000	192,000	135,000
14.....	135,000	116,000	155,000	168,000	120,000	185,000	275,000	522,000	399,000	322,000	185,000	134,000
15.....	134,000	117,000	150,000	230,000	117,000	195,000	267,000	536,000	390,000	313,000	180,000	132,000
16.....	131,000	118,000	147,000	251,000	115,000	205,000	278,000	530,000	385,000	302,000	176,000	131,000
17.....	130,000	122,000	144,000	223,000	113,000	209,000	283,000	518,000	383,000	302,000	172,000	130,000
18.....	130,000	124,000	142,000	212,000	112,000	211,000	284,000	522,000	381,000	294,000	168,000	129,000
19.....	128,000	128,000	140,000	206,000	110,000	211,000	286,000	547,000	409,000	286,000	163,000	126,000
20.....	129,000	130,000	136,000	201,000	107,000	213,000	284,000	541,000	403,000	278,000	161,000	126,000
21.....	130,000	138,000	136,000	192,000	103,000	215,000	291,000	528,000	394,000	272,000	159,000	129,000
22.....	135,000	142,000	136,000	188,000	118,000	211,000	295,000	518,000	390,000	267,000	159,000	129,000
23.....	140,000	147,000	132,000	181,000	118,000	218,000	303,000	505,000	395,000	264,000	159,000	128,000
24.....	141,000	148,000	136,000	177,000	130,000	220,000	303,000	501,000	409,000	261,000	157,000	125,000
25.....	140,000	148,000	140,000	172,000	142,000	223,000	302,000	487,000	412,000	255,000	154,000	122,000
26.....	136,000	150,000	144,000	165,000	141,000	225,000	299,000	481,000	418,000	249,000	152,000	120,000
27.....	135,000	150,000	147,000	161,000	140,000	225,000	294,000	471,000	428,000	246,000	155,000	121,000
28.....	131,000	159,000	144,000	156,000	138,000	227,000	291,000	455,000	437,000	243,000	156,000	123,000
29.....	129,000	163,000	142,000	148,000	.....	230,000	287,000	453,000	441,000	240,000	159,000	124,000
30.....	128,000	166,000	140,000	142,000	.....	226,000	287,000	451,000	441,000	240,000	159,000	124,000
31.....	125,000	.....	138,000	138,000	.....	220,000	.....	447,000	.....	239,000	157,000	.....
1900-1901.												
1.....	122,000	140,000	113,000	141,000	107,000	227,000	148,000	205,000	662,000	412,000	281,000	165,000
2.....	120,000	142,000	112,000	135,000	105,000	245,000	146,000	218,000	653,000	401,000	278,000	164,000
3.....	118,000	142,000	111,000	130,000	103,000	261,000	141,000	232,000	646,000	390,000	270,000	161,000
4.....	117,000	138,000	112,000	124,000	101,000	269,000	140,000	252,000	644,000	379,000	264,000	161,000
5.....	116,000	137,000	115,000	121,000	95,000	261,000	141,000	279,000	646,000	367,000	263,000	160,000
6.....	115,000	140,000	116,000	120,000	94,000	242,000	137,000	292,000	642,000	365,000	260,000	156,000
7.....	113,000	140,000	123,000	118,000	93,000	227,000	137,000	307,000	629,000	365,000	255,000	154,000
8.....	112,000	137,000	135,000	120,000	92,000	218,000	140,000	315,000	609,000	363,000	252,000	152,000
9.....	113,000	135,000	140,000	116,000	91,000	202,000	140,000	328,000	587,000	361,000	249,000	151,000
10.....	114,000	131,000	140,000	110,000	87,400	195,000	138,000	322,000	574,000	361,000	243,000	150,000
11.....	111,000	129,000	138,000	110,000	84,710	191,000	138,000	350,000	558,000	359,000	237,000	148,000
12.....	107,000	126,000	134,000	108,000	81,100	188,000	141,000	370,000	536,000	358,000	233,000	147,000
13.....	106,000	125,000	130,000	147,000	81,100	183,000	142,000	376,000	526,000	358,000	226,000	143,000
14.....	105,000	124,000	129,000	160,000	82,900	176,000	147,000	394,000	499,000	354,000	220,000	141,000
15.....	105,000	123,000	129,000	160,000	84,700	172,000	157,000	424,000	485,000	347,000	218,000	136,000
16.....	103,000	121,000	128,000	157,000	120,000	166,000	164,000	449,000	471,000	347,000	215,000	129,000
17.....	101,000	121,000	128,000	156,000	136,000	164,000	172,000	479,000	459,000	345,000	209,000	125,000
18.....	100,000	120,000	126,000	155,000	148,000	159,000	172,000	511,000	447,000	340,000	209,000	124,000
19.....	99,000	117,000	129,000	150,000	168,000	156,000	172,000	545,000	441,000	332,000	206,000	121,000
20.....	99,000	118,000	132,000	144,000	163,000	156,000	173,000	562,000	437,000	327,000	201,000	120,000
21.....	100,000	123,000	151,000	134,000	151,000	157,000	174,000	566,000	437,000	323,000	195,000	116,000
22.....	105,000	121,000	150,000	130,000	147,000	159,000	178,000	547,000	445,000	313,000	191,000	113,000
23.....	111,000	118,000	157,000	125,000	142,000	156,000	187,000	528,000	445,000	311,000	192,000	108,000
24.....	115,000	113,000	180,000	122,000	143,000	156,000	194,000	520,000	545,000	310,000	192,000	107,000
25.....	122,000	112,000	178,000	123,000	160,000	161,000	199,000	503,000	443,000	308,000	187,000	106,000
26.....	124,000	112,000	170,000	123,000	165,000	163,000	205,000	497,000	437,000	303,000	184,000	106,000
27.....	128,000	110,000	165,000	120,000	191,000	161,000	209,000	520,000	428,000	299,000	178,000	105,000
28.....	131,000	106,000	157,000	117,000	206,000	160,000	211,000	551,000	420,000	289,000	173,000	105,000
29.....	134,000	107,000	157,000	114,000	.....	157,000	208,000	587,000	412,000	287,000	169,000	102,000
30.....	136,000	113,000	151,000	112,000	.....	156,000	206,000	622,000	405,000	289,000	168,000	99,000
31.....	137,000	.....	144,000	110,000	.....	152,000	.....	646,000	.....	286,000	166,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901-2.												
1.....	99,000	77,800	89,200	89,200	67,600	141,000	89,200	177,000	644,000	426,000	315,000	170,000
2.....	97,000	77,000	90,100	89,200	64,800	137,000	89,200	181,000	635,000	422,000	310,000	168,000
3.....	101,000	78,600	92,000	87,400	61,300	134,000	88,300	181,000	629,000	426,000	302,000	164,000
4.....	100,000	81,100	98,000	86,500	58,000	125,000	89,200	180,000	616,000	432,000	294,000	157,000
5.....	99,000	82,900	101,000	85,600	70,600	121,000	92,000	180,000	600,000	441,000	287,000	152,000
6.....	95,000	82,900	102,000	89,200	80,200	117,000	96,000	183,000	585,000	453,000	275,000	150,000
7.....	93,000	82,000	102,000	92,000	80,200	115,000	107,000	187,000	570,000	483,000	269,000	147,000
8.....	92,000	81,100	104,000	98,000	77,800	113,000	114,000	192,000	562,000	481,000	264,000	140,000
9.....	92,000	81,100	106,000	100,000	77,000	112,000	122,000	204,000	560,000	477,000	257,000	136,000
10.....	90,100	85,600	102,000	101,000	77,000	113,000	134,000	223,000	558,000	467,000	248,000	134,000
11.....	89,200	84,700	99,000	102,000	79,400	113,000	142,000	252,000	570,000	459,000	243,000	129,000
12.....	87,400	82,900	97,000	102,000	87,400	112,000	148,000	276,000	596,000	457,000	240,000	124,000
13.....	86,500	82,000	97,000	101,000	96,000	110,000	148,000	303,000	602,000	445,000	233,000	123,000
14.....	85,600	81,100	95,000	100,000	124,000	110,000	142,000	323,000	591,000	437,000	227,000	124,000
15.....	84,700	79,400	92,000	95,000	121,000	113,000	137,000	339,000	576,000	432,000	223,000	123,000
16.....	82,900	82,000	83,800	94,000	124,000	110,000	135,000	349,000	562,000	420,000	220,000	120,000
17.....	82,900	82,900	81,100	93,000	128,000	107,000	135,000	394,000	543,000	411,000	218,000	117,000
18.....	82,000	82,000	81,100	91,000	126,000	106,000	136,000	416,000	528,000	403,000	215,000	115,000
19.....	82,000	80,200	78,600	90,100	126,000	104,000	144,000	441,000	516,000	394,000	212,000	115,000
20.....	81,100	82,000	77,800	89,200	126,000	103,000	156,000	447,000	497,000	388,000	211,000	114,000
21.....	80,200	82,000	77,800	88,300	140,000	102,000	172,000	449,000	475,000	385,000	208,000	113,000
22.....	78,600	83,800	77,800	88,300	129,000	102,000	187,000	449,000	473,000	377,000	205,000	110,000
23.....	77,800	93,000	82,900	85,600	123,000	103,000	192,000	471,000	467,000	370,000	201,000	107,000
24.....	77,800	88,300	82,900	82,900	117,000	105,000	194,000	477,000	459,000	365,000	197,000	106,000
25.....	77,800	86,500	82,000	78,600	117,000	105,000	192,000	483,000	457,000	354,000	194,000	104,000
26.....	77,000	92,000	82,000	77,800	117,000	103,000	191,000	497,000	457,000	349,000	190,000	103,000
27.....	77,800	93,000	107,000	73,800	114,000	102,000	184,000	511,000	455,000	344,000	185,000	102,000
28.....	77,000	94,000	114,000	72,200	123,000	100,000	181,000	528,000	447,000	339,000	181,000	101,000
29.....	77,000	87,400	107,000	72,200	.....	.....	97,000	177,000	560,000	439,000	335,000	178,000
30.....	77,800	87,400	93,000	71,400	.....	.....	94,000	177,000	607,000	432,000	330,000	177,000
31.....	77,000	.....	91,000	70,600	.....	.....	91,000	.....	635,000	.....	323,000	176,000
1902-3.												
1.....	95,000	76,200	81,000	94,000	125,000	77,800	212,000	252,000	385,000	642,000	286,000	172,000
2.....	94,000	77,000	88,300	92,000	124,000	77,800	223,000	245,000	420,000	627,000	281,000	168,000
3.....	92,000	77,800	87,400	102,000	122,000	77,000	226,000	240,000	477,000	602,000	273,000	164,000
4.....	91,000	77,000	87,400	113,000	112,000	77,000	219,000	240,000	551,000	576,000	267,000	163,000
5.....	91,000	76,200	88,300	113,000	100,000	76,200	212,000	240,000	609,000	560,000	260,000	168,000
6.....	90,100	75,400	92,000	123,000	94,000	75,400	201,000	251,000	633,000	543,000	254,000	166,000
7.....	89,200	76,200	91,000	135,000	90,100	76,200	191,000	261,000	642,000	524,000	249,000	164,000
8.....	89,200	80,200	88,300	140,000	89,200	77,000	184,000	278,000	653,000	505,000	245,000	161,000
9.....	88,300	78,600	87,400	134,000	87,400	76,200	176,000	292,000	668,000	493,000	239,000	156,000
10.....	87,400	82,900	87,400	124,000	94,000	75,400	172,000	297,000	697,000	489,000	233,000	159,000
11.....	84,700	87,400	88,300	116,000	92,000	79,400	170,000	294,000	730,000	479,000	227,000	157,000
12.....	84,700	92,000	92,000	111,000	90,100	77,800	169,000	294,000	748,000	461,000	222,000	156,000
13.....	84,700	92,000	96,000	104,000	87,400	74,600	169,000	289,000	757,000	445,000	219,000	155,000
14.....	83,800	91,000	94,000	99,000	85,600	77,800	168,000	289,000	773,000	430,000	212,000	155,000
15.....	83,800	90,100	91,000	98,000	82,900	83,800	165,000	303,000	780,000	412,000	209,000	152,000
16.....	82,900	89,200	89,200	95,000	78,600	93,000	161,000	337,000	785,000	401,000	204,000	150,000
17.....	82,900	92,000	87,400	92,000	77,800	104,000	161,000	358,000	785,000	388,000	199,000	147,000
18.....	82,000	93,000	83,800	88,300	75,400	110,000	160,000	368,000	787,000	383,000	199,000	144,000
19.....	80,200	91,000	79,400	87,400	75,400	110,000	160,000	365,000	787,000	372,000	198,000	143,000
20.....	80,200	89,200	77,800	85,600	73,800	108,000	163,000	354,000	778,000	361,000	197,000	141,000
21.....	79,400	88,300	76,200	89,200	73,800	105,000	168,000	347,000	762,000	356,000	192,000	135,000
22.....	78,600	87,400	73,800	92,000	73,800	99,000	172,000	340,000	750,000	347,000	191,000	132,000
23.....	78,600	86,500	72,200	92,000	74,600	96,000	178,000	335,000	741,000	337,000	190,000	130,000
24.....	77,800	87,400	72,200	100,000	75,400	96,000	185,000	330,000	727,000	332,000	185,000	130,000
25.....	77,800	85,600	73,800	150,000	75,400	100,000	198,000	323,000	718,000	318,000	184,000	130,000
26.....	77,800	82,900	75,400	148,000	75,400	102,000	209,000	320,000	700,000	313,000	183,000	130,000
27.....	77,800	83,800	80,200	168,000	76,200	108,000	222,000	322,000	684,000	307,000	180,000	130,000
28.....	77,800	84,700	78,600	178,000	75,400	123,000	236,000	325,000	664,000	302,000	178,000	134,000
29.....	77,000	85,600	82,900	165,000	.....	.....	154,000	245,000	344,000	655,000	299,000	178,000
30.....	77,000	88,300	87,400	150,000	.....	.....	160,000	252,000	361,000	644,000	299,000	178,000
31.....	76,200	.....	90,100	137,000	.....	.....	192,000	.....	374,000	.....	291,000	174,000

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	141,000	135,000	134,000	102,000	88,300	150,000	164,000	491,000	583,000	467,000	254,000	143,000
2.....	142,000	134,000	132,000	101,000	87,400	136,000	177,000	493,000	591,000	463,000	251,000	142,000
3.....	148,000	132,000	132,000	100,000	87,400	125,000	185,000	485,000	596,000	461,000	248,000	138,000
4.....	154,000	130,000	131,000	99,000	86,500	122,000	183,000	477,000	602,000	467,000	242,000	137,000
5.....	157,000	129,000	132,000	98,000	85,600	118,000	194,000	473,000	602,000	463,000	236,000	136,000
6.....	161,000	136,000	134,000	98,000	84,700	120,000	197,000	473,000	587,000	461,000	233,000	134,000
7.....	166,000	137,000	135,000	97,000	83,800	138,000	199,000	473,000	583,000	457,000	230,000	131,000
8.....	166,000	135,000	131,000	95,000	82,900	142,000	212,000	471,000	587,000	459,000	227,000	131,000
9.....	168,000	135,000	125,000	95,000	82,000	163,000	211,000	465,000	602,000	453,000	225,000	131,000
10.....	170,000	137,000	124,000	97,000	81,100	208,000	213,000	459,000	598,000	459,000	220,000	129,000
11.....	173,000	142,000	124,000	100,000	80,200	248,000	223,000	445,000	591,000	455,000	219,000	128,000
12.....	170,000	138,000	123,000	101,000	80,200	243,000	243,000	445,000	581,000	457,000	213,000	125,000
13.....	168,000	137,000	123,000	102,000	81,100	230,000	281,000	455,000	566,000	497,000	209,000	124,000
14.....	169,000	135,000	121,000	103,000	82,000	213,000	315,000	457,000	556,000	441,000	208,000	124,000
15.....	166,000	135,000	120,000	104,000	82,000	197,000	359,000	465,000	549,000	435,000	206,000	125,000
16.....	164,000	134,000	123,000	104,000	83,800	181,000	399,000	467,000	539,000	428,000	202,000	125,000
17.....	163,000	131,000	122,000	106,000	85,600	174,000	447,000	473,000	539,000	420,000	198,000	124,000
18.....	163,000	130,000	123,000	108,000	92,000	173,000	463,000	477,000	551,000	414,000	194,000	124,000
19.....	160,000	129,000	124,000	107,000	96,000	169,000	479,000	485,000	566,000	399,000	191,000	123,000
20.....	155,000	126,000	123,000	107,000	102,000	174,000	467,000	493,000	570,000	383,000	187,000	120,000
21.....	151,000	125,000	122,000	106,000	111,000	174,000	461,000	501,000	572,000	370,000	180,000	117,000
22.....	150,000	124,000	121,000	106,000	112,000	176,000	465,000	509,000	566,000	363,000	177,000	114,000
23.....	148,000	123,000	120,000	104,000	112,000	183,000	463,000	543,000	560,000	345,000	176,000	112,000
24.....	147,000	132,000	118,000	100,000	122,000	172,000	463,000	589,000	547,000	330,000	170,000	111,000
25.....	143,000	141,000	117,000	98,000	122,000	170,000	451,000	609,000	534,000	315,000	172,000	107,000
26.....	140,000	140,000	117,000	95,000	137,000	159,000	432,000	629,000	522,000	308,000	165,000	107,000
27.....	140,000	137,000	112,000	93,000	160,000	147,000	418,000	620,000	503,000	295,000	164,000	107,000
28.....	141,000	136,000	107,000	91,000	165,000	142,000	418,000	602,000	487,000	286,000	160,000	104,000
29.....	138,000	134,000	103,000	89,200	159,000	140,000	447,000	585,000	473,000	275,000	156,000	101,000
30.....	135,000	132,000	101,000	90,100	157,000	140,000	473,000	574,000	467,000	267,000	152,000	98,000
31.....	135,000	.....	103,000	90,100	160,000	.....	.....	574,000	.....	261,000	147,000	.....
1904-5.												
1.....	96,000	74,600	76,200	71,400	72,200	78,600	123,000	181,000	269,000	311,000	205,000	121,000
2.....	96,000	74,600	78,600	72,200	70,600	81,100	122,000	177,000	283,000	303,000	204,000	118,000
3.....	95,000	73,800	75,400	73,000	69,000	82,900	120,000	177,000	297,000	295,000	204,000	116,000
4.....	92,000	72,200	73,000	75,400	66,900	84,700	116,000	174,000	315,000	289,000	204,000	113,000
5.....	88,300	71,400	72,200	71,400	65,500	87,400	117,000	174,000	334,000	284,000	201,000	112,000
6.....	87,400	71,400	71,400	69,800	64,100	90,100	116,000	172,000	349,000	279,000	197,000	108,000
7.....	87,400	71,400	70,600	68,300	65,500	92,000	116,000	173,000	365,000	275,000	197,000	105,000
8.....	85,600	70,600	69,000	66,900	66,900	93,000	115,000	177,000	368,000	267,000	197,000	102,000
9.....	85,600	69,800	68,300	62,000	63,400	94,000	116,000	178,000	368,000	266,000	197,000	100,000
10.....	48,700	69,000	67,600	61,300	62,000	96,000	114,000	181,000	374,000	266,000	194,000	98,000
11.....	87,400	69,000	66,900	62,700	59,200	99,000	121,000	191,000	394,000	261,000	191,000	97,000
12.....	89,200	68,300	66,200	63,400	58,000	100,000	124,000	199,000	407,000	255,000	190,000	96,000
13.....	86,500	68,300	73,000	60,600	56,200	100,000	126,000	206,000	407,000	251,000	188,000	96,000
14.....	86,500	69,000	74,600	57,400	55,000	102,000	123,000	206,000	411,000	249,000	187,000	96,000
15.....	87,400	69,000	78,600	57,400	54,400	105,000	120,000	206,000	412,000	246,000	183,000	96,000
16.....	87,400	69,000	75,400	58,000	52,600	107,000	121,000	202,000	409,000	245,000	178,000	94,000
17.....	86,500	69,800	73,800	58,600	53,200	110,000	118,000	205,000	401,000	243,000	178,000	93,000
18.....	85,600	69,800	73,800	60,600	54,400	112,000	118,000	204,000	394,000	236,000	178,000	92,000
19.....	83,800	69,000	73,800	62,000	54,400	112,000	120,000	208,000	385,000	233,000	176,000	91,000
20.....	83,800	73,800	72,200	61,300	56,800	112,000	122,000	218,000	376,000	232,000	173,000	90,100
21.....	82,900	78,600	71,400	60,600	59,200	115,000	121,000	223,000	365,000	229,000	170,000	87,400
22.....	82,000	77,000	70,600	61,300	61,300	117,000	129,000	226,000	356,000	226,000	166,000	83,800
23.....	80,200	75,400	71,400	64,100	62,000	118,000	134,000	230,000	350,000	220,000	160,000	79,400
24.....	79,400	76,200	72,200	65,500	68,300	122,000	140,000	232,000	342,000	216,000	154,000	78,600
25.....	78,600	77,000	71,400	66,900	70,600	123,000	148,000	230,000	339,000	211,000	148,000	77,800
26.....	77,800	76,200	70,600	69,000	71,400	124,000	152,000	230,000	335,000	209,000	142,000	78,600
27.....	77,000	77,000	67,600	70,600	73,000	126,000	165,000	230,000	332,000	208,000	138,000	82,000
28.....	77,000	77,000	66,900	80,200	75,900	126,000	174,000	233,000	332,000	206,000	134,000	84,700
29.....	77,000	75,400	68,300	78,600	.....	130,000	188,000	234,000	325,000	204,000	130,000	88,300
30.....	76,200	75,400	72,200	77,000	.....	130,000	188,000	245,000	318,000	205,000	128,000	90,100
31.....	75,400	.....	71,400	73,800	.....	125,000	.....	252,000	.....	206,000	124,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	92,000	93,000	76,200	62,700	69,800	98,000	165,000	258,000	374,000	284,000	223,000	122,000
2	95,000	92,000	75,400	63,400	69,000	96,000	166,000	258,000	363,000	286,000	218,000	127,000
3	97,000	91,000	73,800	63,400	69,800	92,000	170,000	267,000	349,000	287,000	211,000	110,000
4	100,000	88,300	72,200	62,700	69,800	93,000	183,000	275,000	349,000	287,000	209,000	117,000
5	104,000	84,700	71,400	62,000	69,800	92,000	183,000	276,000	345,000	287,000	206,000	116,000
6	111,000	83,800	70,600	61,300	69,000	90,100	174,000	291,000	350,000	287,000	202,000	115,000
7	112,000	82,900	73,000	60,600	69,000	88,300	168,000	294,000	356,000	284,000	195,000	115,000
8	115,000	82,000	72,200	59,900	67,600	86,500	170,000	289,000	358,000	284,000	192,000	115,000
9	115,000	81,100	71,400	60,600	66,200	86,500	176,000	283,000	354,000	283,000	187,000	114,000
10	115,000	80,200	69,800	61,300	65,500	85,600	184,000	283,000	345,000	283,000	177,000	113,000
11	115,000	79,400	69,000	59,900	64,800	84,700	195,000	289,000	340,000	287,000	166,000	112,000
12	115,000	78,600	68,300	59,200	64,100	92,000	202,000	295,000	335,000	289,000	164,000	112,000
13	114,000	77,800	67,600	59,900	64,100	94,000	201,000	305,000	335,000	291,000	164,000	116,000
14	114,000	77,000	65,500	59,900	64,100	93,000	198,000	316,000	339,000	297,000	163,000	123,000
15	112,000	76,200	63,400	59,200	64,800	91,000	191,000	323,000	345,000	300,000	161,000	129,000
16	112,000	75,400	62,700	60,600	64,800	87,400	185,000	322,000	345,000	299,000	161,000	131,000
17	111,000	73,800	63,400	61,300	69,000	85,600	183,000	316,000	345,000	297,000	161,000	131,000
18	106,000	74,600	64,100	62,700	71,400	82,000	185,000	315,000	344,000	294,000	160,000	129,000
19	104,000	75,400	64,800	63,400	76,200	78,600	194,000	308,000	345,000	289,000	160,000	125,000
20	102,000	77,000	65,500	62,700	77,800	75,400	199,000	305,000	335,000	281,000	160,000	124,000
21	100,000	73,800	65,500	61,300	87,400	74,600	208,000	300,000	332,000	275,000	160,000	121,000
22	98,000	73,800	64,800	61,300	92,000	74,600	211,000	297,000	323,000	273,000	155,000	117,000
23	97,000	73,800	64,100	64,100	97,000	73,800	216,000	297,000	310,000	269,000	150,000	114,000
24	96,000	73,800	64,100	66,200	100,000	76,200	229,000	299,000	303,000	275,000	150,000	108,000
25	95,000	76,200	64,800	67,600	102,000	77,800	245,000	295,000	302,000	272,000	146,000	106,000
26	93,000	75,400	65,500	67,600	101,000	83,800	260,000	299,000	295,000	270,000	141,000	102,000
27	92,000	74,600	64,800	68,300	101,000	91,000	264,000	299,000	289,000	252,000	136,000	102,000
28	92,000	74,600	64,100	69,800	100,000	111,000	264,000	307,000	286,000	239,000	135,000	101,000
29	93,000	74,600	63,400	71,400	-----	125,000	257,000	332,000	278,000	240,000	130,000	101,000
30	95,000	76,200	63,400	72,200	-----	142,000	251,000	330,000	279,000	236,000	126,000	100,000
31	93,000	-----	64,100	72,200	-----	157,000	-----	345,000	-----	229,000	125,000	-----
1906-7.												
1	100,000	99,000	114,000	142,000	118,000	191,000	160,000	255,000	539,000	516,000	305,000	178,000
2	98,000	96,000	114,000	140,000	117,000	176,000	156,000	248,000	551,000	522,000	302,000	180,000
3	97,000	92,000	113,000	135,000	114,000	169,000	157,000	248,000	568,000	522,000	295,000	180,000
4	96,000	92,000	112,000	137,000	113,000	160,000	168,000	251,000	585,000	522,000	289,000	178,000
5	95,000	92,000	112,000	132,000	113,000	151,000	173,000	254,000	587,000	522,000	281,000	178,000
6	94,000	93,000	112,000	128,000	138,000	144,000	181,000	255,000	578,000	532,000	278,000	178,000
7	94,000	93,000	112,000	126,000	173,000	141,000	190,000	261,000	574,000	522,000	275,000	178,000
8	93,000	101,000	112,000	121,000	187,000	137,000	197,000	269,000	578,000	513,000	270,000	177,000
9	91,000	100,000	111,000	116,000	212,000	134,000	202,000	275,000	583,000	503,000	267,000	176,000
10	90,100	100,000	110,000	110,000	208,000	137,000	213,000	287,000	581,000	493,000	260,000	176,000
11	88,300	102,000	114,000	107,000	198,000	140,000	213,000	299,000	566,000	483,000	252,000	174,000
12	88,300	105,000	113,000	103,000	185,000	144,000	225,000	315,000	553,000	479,000	245,000	173,000
13	86,500	114,000	111,000	96,000	170,000	150,000	237,000	340,000	543,000	469,000	243,000	166,000
14	86,500	134,000	108,000	83,800	160,000	146,000	240,000	345,000	547,000	455,000	240,000	166,000
15	85,600	150,000	110,000	80,200	152,000	143,000	254,000	345,000	551,000	449,000	233,000	165,000
16	86,500	185,000	111,000	77,800	143,000	138,000	273,000	342,000	543,000	441,000	225,000	164,000
17	87,400	245,000	110,000	83,800	137,000	134,000	281,000	349,000	522,000	430,000	218,000	161,000
18	87,400	260,000	105,000	88,300	137,000	131,000	287,000	376,000	513,000	418,000	211,000	159,000
19	88,300	234,000	106,000	93,000	143,000	129,000	289,000	414,000	503,000	405,000	204,000	155,000
20	88,300	202,000	105,000	94,000	148,000	138,000	283,000	449,000	491,000	394,000	197,000	152,000
21	87,400	180,000	128,000	105,000	151,000	163,000	273,000	473,000	485,000	383,000	195,000	151,000
22	86,500	159,000	135,000	108,000	154,000	204,000	266,000	491,000	483,000	374,000	195,000	151,000
23	86,500	147,000	150,000	112,000	161,000	251,000	258,000	503,000	493,000	365,000	194,000	151,000
24	87,400	141,000	155,000	106,000	165,000	248,000	258,000	507,000	499,000	356,000	190,000	151,000
25	90,100	137,000	148,000	104,000	173,000	233,000	261,000	511,000	495,000	349,000	190,000	150,000
26	89,200	132,000	138,000	99,000	177,000	219,000	269,000	511,000	489,000	340,000	183,000	147,000
27	90,100	130,000	136,000	94,000	180,000	204,000	270,000	511,000	483,000	334,000	180,000	141,000
28	91,000	125,000	147,000	89,200	185,000	192,000	267,000	513,000	481,000	325,000	178,000	138,000
29	100,000	122,000	155,000	83,800	-----	183,000	261,000	513,000	487,000	316,000	183,000	137,000
30	108,000	117,000	152,000	77,800	-----	174,000	261,000	513,000	503,000	310,000	181,000	135,000
31	105,000	-----	147,000	77,800	-----	166,000	-----	522,000	-----	305,000	178,000	-----

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	135,000	93,000	87,400	87,400	63,400	73,000	125,000	270,000	403,000	511,000	310,000	155,000
2.....	135,000	95,000	86,500	84,700	62,700	74,600	123,000	269,000	399,000	503,000	297,000	152,000
3.....	134,000	95,000	85,600	82,900	62,000	74,600	123,000	275,000	401,000	509,000	283,000	148,000
4.....	129,000	95,000	84,700	82,000	60,600	74,600	118,000	287,000	403,000	497,000	279,000	144,000
5.....	126,000	93,000	85,600	81,100	59,900	74,600	116,000	300,000	407,000	493,000	258,000	141,000
6.....	126,000	91,000	84,700	81,100	62,700	74,600	115,000	302,000	435,000	483,000	251,000	137,000
7.....	125,000	88,300	84,700	79,400	64,800	74,600	116,000	302,000	467,000	475,000	243,000	134,000
8.....	125,000	87,400	83,800	78,600	64,100	73,000	114,000	303,000	457,000	461,000	234,000	126,000
9.....	124,000	86,500	83,800	79,400	64,100	70,600	113,000	318,000	481,000	451,000	227,000	124,000
10.....	123,000	85,600	82,900	77,800	66,900	69,800	112,000	340,000	501,000	441,000	223,000	121,000
11.....	122,000	85,600	84,700	77,000	66,900	70,600	110,000	349,000	543,000	432,000	216,000	118,000
12.....	121,000	86,500	85,600	76,200	69,000	70,600	112,000	350,000	566,000	422,000	211,000	120,000
13.....	120,000	87,400	90,100	74,600	68,300	70,600	117,000	347,000	587,000	416,000	202,000	118,000
14.....	120,000	87,400	89,200	74,600	67,600	77,800	126,000	340,000	613,000	409,000	198,000	117,000
15.....	118,000	87,400	86,500	73,800	66,900	87,400	143,000	342,000	629,000	403,000	194,000	118,000
16.....	116,000	87,400	84,700	72,200	66,200	90,100	163,000	345,000	635,000	403,000	190,000	116,000
17.....	115,000	86,500	82,000	72,200	67,600	156,000	174,000	349,000	646,000	399,000	184,000	115,000
18.....	114,000	85,600	82,900	71,400	66,900	225,000	192,000	358,000	653,000	395,000	181,000	113,000
19.....	112,000	84,700	80,200	72,200	67,600	215,000	209,000	361,000	646,000	401,000	178,000	111,000
20.....	111,000	84,700	78,600	74,600	68,300	195,000	211,000	363,000	633,000	397,000	173,000	112,000
21.....	110,000	83,800	77,800	74,600	67,600	178,000	222,000	363,000	620,000	392,000	170,000	113,000
22.....	108,000	83,800	79,400	73,000	68,300	166,000	242,000	370,000	602,000	388,000	168,000	114,000
23.....	106,000	83,800	91,000	72,200	68,300	155,000	260,000	372,000	583,000	381,000	166,000	115,000
24.....	105,000	87,400	95,000	73,000	68,300	142,000	281,000	376,000	574,000	372,000	165,000	113,000
25.....	104,000	90,100	93,000	73,800	67,600	136,000	303,000	376,000	558,000	367,000	161,000	110,000
26.....	103,000	91,000	118,000	71,400	67,600	136,000	299,000	376,000	545,000	359,000	159,000	106,000
27.....	102,000	90,100	107,000	69,800	67,600	140,000	299,000	385,000	534,000	349,000	159,000	106,000
28.....	101,000	87,400	102,000	68,300	67,600	140,000	289,000	392,000	536,000	342,000	159,000	105,000
29.....	100,000	86,500	99,000	67,600	69,800	135,000	278,000	395,000	532,000	332,000	159,000	104,000
30.....	98,000	85,600	92,000	67,600	.....	131,000	272,000	399,000	520,000	322,000	160,000	102,000
31.....	96,000	.....	89,200	66,200	.....	130,000	.....	401,000	.....	316,000	163,000	.....
1908-9.												
1.....	102,000	83,800	91,000	67,600	98,000	101,000	132,000	188,000	395,000	555,000	283,000	143,000
2.....	102,000	83,800	87,400	67,600	94,100	100,000	140,000	181,000	395,000	545,000	275,000	154,000
3.....	101,000	83,800	86,500	69,800	91,600	102,000	142,000	176,000	426,000	541,000	269,000	140,000
4.....	98,000	85,600	86,500	72,200	97,000	103,000	146,000	174,000	491,000	530,000	263,000	140,000
5.....	97,000	86,500	86,500	68,300	97,000	105,000	148,000	173,000	549,000	520,000	258,000	136,000
6.....	94,000	85,600	85,600	66,900	96,000	106,000	148,000	187,000	596,000	507,000	251,000	136,000
7.....	90,100	85,600	85,600	65,500	95,000	110,000	143,000	206,000	631,000	501,000	246,000	136,000
8.....	89,200	84,700	84,700	64,800	94,000	112,000	140,000	215,000	638,000	493,000	240,000	137,000
9.....	89,200	82,900	84,700	64,100	93,000	111,000	137,000	216,000	629,000	485,000	236,000	135,000
10.....	88,300	82,900	83,800	63,400	92,000	108,000	138,000	209,000	616,000	479,000	230,000	135,000
11.....	89,200	82,900	82,900	63,400	91,000	105,000	136,000	206,000	602,000	479,000	222,000	135,000
12.....	88,300	82,900	82,000	64,800	89,200	104,000	137,000	209,000	594,000	473,000	216,000	134,000
13.....	87,400	82,900	82,000	65,500	87,400	104,000	142,000	215,000	591,000	471,000	222,000	134,000
14.....	87,400	82,900	82,000	66,200	85,600	101,000	140,000	212,000	596,000	469,000	216,000	132,000
15.....	86,500	82,900	81,100	66,900	84,700	94,000	143,000	212,000	600,000	461,000	208,000	132,000
16.....	85,600	83,800	79,400	70,600	87,400	93,000	147,000	209,000	613,000	445,000	202,000	131,000
17.....	86,500	85,600	79,400	74,600	105,000	92,000	152,000	209,000	629,000	430,000	183,000	131,000
18.....	94,000	87,400	77,000	82,000	107,000	105,000	151,600	210,000	655,000	411,000	177,000	130,000
19.....	95,000	86,500	74,600	90,100	122,000	108,000	157,000	226,000	675,000	394,000	176,000	129,000
20.....	98,000	87,400	72,200	243,000	129,000	111,000	163,000	233,000	666,000	381,000	174,000	128,000
21.....	96,000	90,100	69,800	275,000	140,000	111,000	160,000	232,000	666,000	368,000	173,000	126,000
22.....	90,100	94,000	67,600	275,000	130,000	112,000	157,000	236,000	662,000	361,000	169,000	123,000
23.....	87,400	96,000	66,900	240,000	123,000	113,000	155,000	245,000	649,000	347,000	168,000	118,000
24.....	87,400	97,000	67,600	216,000	115,000	116,000	155,000	251,000	638,000	337,000	165,000	120,000
25.....	87,400	97,000	67,600	216,000	115,000	110,000	152,000	252,000	624,000	322,000	161,000	120,000
26.....	84,700	97,000	70,600	118,000	108,000	110,000	150,000	257,000	611,000	311,000	160,000	117,000
27.....	83,800	96,000	73,000	87,400	106,000	115,000	151,000	264,000	600,000	302,000	156,000	112,000
28.....	84,700	94,000	73,000	74,600	103,000	116,000	166,000	287,000	587,000	291,000	150,000	112,000
29.....	84,700	94,000	74,600	70,600	.....	123,000	185,000	322,000	574,000	284,000	148,000	110,000
30.....	83,800	94,000	71,400	105,000	.....	128,000	187,000	365,000	564,000	286,000	148,000	106,000
31.....	84,700	.....	69,800	108,000	.....	130,000	.....	388,000	.....	289,000	146,000	.....

Daily discharge, in second-feet, of Columbia River at The Dalles, Oreg., for 1878-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	104,000	90,100	183,000	98,000	112,000	136,000	267,000	485,000	479,000	307,000	197,000	121,000
2.....	102,000	94,000	190,000	91,000	105,000	177,000	258,000	469,000	481,000	302,000	197,000	116,000
3.....	103,000	99,000	198,000	86,500	102,000	202,000	258,000	457,000	485,000	297,000	195,000	114,000
4.....	105,000	102,000	195,000	95,000	96,000	279,000	255,000	447,000	485,000	294,000	192,000	113,000
5.....	104,000	102,000	184,000	107,000	90,100	320,000	260,000	437,000	481,000	287,000	191,000	112,000
6.....	103,000	111,000	173,000	107,000	90,100	325,000	260,000	433,000	463,000	276,000	187,000	108,000
7.....	103,000	111,000	160,000	105,000	90,100	307,000	254,000	445,000	447,000	266,000	181,000	104,000
8.....	103,000	107,000	152,000	106,000	87,400	267,000	249,000	449,000	435,000	261,000	177,000	99,000
9.....	103,000	107,000	151,000	97,000	87,400	240,000	254,000	451,000	426,000	254,000	176,000	97,000
10.....	103,000	107,000	150,000	103,000	88,300	223,000	255,000	447,000	418,000	248,000	174,000	97,000
11.....	103,000	105,000	148,000	102,000	87,400	209,000	266,000	493,000	412,000	242,000	169,000	95,000
12.....	104,000	105,000	151,000	102,000	86,500	209,000	281,000	526,000	409,000	236,000	168,000	93,000
13.....	105,000	106,000	160,000	104,000	88,300	209,000	302,000	558,000	401,000	232,000	165,000	92,000
14.....	105,000	105,000	155,000	107,000	91,000	215,000	325,000	566,000	405,000	232,000	161,000	88,300
15.....	104,000	103,000	150,000	113,000	91,000	219,000	328,000	562,000	401,000	229,000	160,000	90,100
16.....	104,000	101,000	148,000	114,000	94,000	227,000	328,000	547,000	395,000	226,000	155,000	87,400
17.....	103,000	99,000	143,000	114,000	89,200	237,000	316,000	539,000	390,000	222,000	155,000	86,500
18.....	101,000	97,000	137,000	115,000	87,400	246,000	307,000	526,000	383,000	220,000	154,000	84,700
19.....	100,000	103,000	135,000	126,000	87,400	257,000	303,000	516,000	379,000	220,000	154,000	86,500
20.....	100,000	113,000	131,000	114,000	87,400	266,000	308,000	507,000	374,000	219,000	156,000	86,500
21.....	99,000	113,000	128,000	114,000	89,200	279,000	325,000	501,000	363,000	218,000	154,000	85,600
22.....	98,000	118,000	124,000	101,000	82,900	332,000	349,000	497,000	358,000	218,000	151,000	83,800
23.....	97,000	156,000	120,000	124,000	81,100	356,000	370,000	485,000	350,000	216,000	147,000	85,600
24.....	99,000	163,000	113,000	125,000	79,400	379,000	377,000	475,000	342,000	215,000	140,000	81,100
25.....	99,000	174,000	106,000	120,000	87,400	392,000	379,000	477,000	337,000	212,000	134,000	82,000
26.....	97,000	195,000	104,000	114,000	95,000	372,000	390,000	485,000	334,000	209,000	134,000	82,000
27.....	95,000	218,000	101,000	113,000	111,000	349,000	418,000	493,000	327,000	208,000	135,000	82,000
28.....	94,000	220,000	99,000	111,000	122,000	332,000	449,000	501,000	320,000	205,000	135,000	82,000
29.....	93,000	206,000	98,000	107,000	.....	305,000	477,000	493,000	315,000	202,000	130,000	81,100
30.....	92,000	198,000	97,000	102,000	.....	287,000	485,000	501,000	311,000	199,000	126,000	81,100
31.....	91,000	.....	99,000	104,000	.....	275,000	.....	487,000	.....	197,000	125,000	.....

NOTE.—Daily discharge determined as follows: June 1 to Dec. 6, 1878, from gage heights at Umatilla and a poorly defined rating curve; Dec. 12, 1878, to May 31, 1884, from gage heights at Cascade Locks and a fairly well-defined rating curve; June 1, 1884, to Jan. 31, 1892, and thereafter, when the gage at The Dalles was not read, from gage heights at Cascade Locks and a rating curve well-defined above and fairly well below 100,000 second-feet; Feb. 1, 1892, to Sept. 30, 1910, from gage heights at The Dalles, so far as available, and a rating curve well-defined between 80,000 and 900,000 second-feet. Discharge interpolated for days on which gage was not read.

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910.

[Drainage area, 237,000 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1878.							
June.....	485,000	370,000	426,000	1.80	2.01	25,300,000	C.
July.....	370,000	219,000	273,000	1.15	1.33	16,800,000	C.
August.....	222,000	155,000	184,000	.776	.89	11,300,000	C.
September.....	151,000	93,200	124,000	.523	.58	7,380,000	C.
The period.....						60,800,000	
1878-79.							
October.....	100,000	82,900	89,800	.379	.44	5,520,000	C.
November.....	93,200	76,200	83,500	.352	.39	4,970,000	C.
December.....	115,000	71,000	91,000	.384	.44	5,600,000	C.
January.....	71,000	61,200	65,900	.278	.32	4,050,000	B.
February.....	217,000	59,600	87,200	.368	.38	4,840,000	B.
March.....	317,000	139,000	181,000	.764	.88	11,100,000	B.
April.....	453,000	313,000	360,000	1.52	1.70	21,400,000	B.
May.....	559,000	325,000	395,000	1.67	1.92	24,300,000	B.
June.....	643,000	559,000	612,000	2.58	2.88	36,400,000	B.
July.....	609,000	381,000	501,000	2.11	2.43	30,800,000	B.
August.....	379,000	209,000	275,000	1.16	1.34	16,900,000	B.
September.....	204,000	119,000	154,000	.650	.73	9,160,000	B.
The year.....	643,000	59,600	242,000	1.02	13.85	175,000,000	
1879-80.							
October.....	124,000	91,000	110,000	.464	.53	6,760,000	B.
November.....	93,000	75,400	85,400	.360	.40	5,080,000	B.
December.....	99,000	69,000	85,400	.360	.42	5,250,000	B.
January.....	112,000	81,100	98,400	.415	.48	6,050,000	B.
February.....	95,000	68,300	77,200	.326	.35	4,440,000	B.
March.....	97,000	68,300	75,200	.317	.37	4,620,000	B.
April.....	232,000	87,400	151,000	.637	.71	8,980,000	B.
May.....	524,000	255,000	404,000	1.70	1.96	24,800,000	B.
June.....	914,000	536,000	698,000	2.95	3.29	41,500,000	B.
July.....	914,000	629,000	793,000	3.35	3.86	48,800,000	B.
August.....	607,000	258,000	386,000	1.63	1.88	23,700,000	B.
September.....	254,000	154,000	198,000	.835	.93	11,800,000	B.
The year.....	914,000	68,300	264,000	1.11	15.18	192,000,000	
1880-81.							
October.....	152,000	113,000	131,000	.553	.64	8,060,000	B.
November.....	121,000	83,800	104,000	.439	.49	6,190,000	B.
December.....	93,000	75,400	80,700	.341	.39	4,960,000	B.
January.....	195,000	73,800	107,000	.451	.52	6,580,000	B.
February.....	361,000	77,800	211,000	.890	.93	11,700,000	B.
March.....	318,000	170,000	221,000	.932	1.07	13,600,000	B.
April.....	495,000	278,000	386,000	1.63	1.82	23,000,000	B.
May.....	449,000	405,000	426,000	1.80	2.08	26,200,000	B.
June.....	598,000	426,000	546,000	2.30	2.57	32,500,000	B.
July.....	556,000	313,000	431,000	1.82	2.10	26,500,000	B.
August.....	311,000	181,000	244,000	1.03	1.19	15,000,000	B.
September.....	178,000	124,000	141,000	.595	.66	8,390,000	B.
The year.....	598,000	73,800	252,000	1.06	14.46	183,000,000	
1881-82.							
October.....	130,000	99,100	110,000	.464	.53	6,760,000	B.
November.....	134,000	91,100	112,000	.473	.53	6,660,000	B.
December.....	92,200	78,000	86,400	.365	.42	5,310,000	B.
January.....	94,400	60,400	78,400	.331	.38	4,820,000	B.
February.....	92,200	60,400	66,700	.281	.29	3,700,000	B.
March.....	183,000	75,000	95,600	.403	.46	5,880,000	B.
April.....	262,000	192,000	229,000	.966	1.08	13,600,000	B.
May.....	542,000	210,000	336,000	1.42	1.64	20,700,000	B.
June.....	883,000	540,000	770,000	3.25	3.63	45,800,000	B.
July.....	643,000	321,000	477,000	2.01	2.32	29,300,000	B.
August.....	313,000	200,000	263,000	1.11	1.28	16,200,000	B.
September.....	197,000	118,000	150,000	.633	.71	8,930,000	B.
The year.....	883,000	60,400	232,000	.979	13.27	168,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1882-83.							
October.....	119,000	102,000	110,000	0.464	0.53	6,760,000	B.
November.....	113,000	79,000	94,400	.398	.44	5,620,000	B.
December.....	197,000	78,000	121,000	.511	.59	7,440,000	B.
January.....	148,000	58,800	87,100	.368	.42	5,360,000	B.
February.....	148,000	63,600	87,500	.369	.38	4,860,000	B.
March.....	298,000	121,000	178,000	.751	.87	10,900,000	B.
April.....	283,000	167,000	197,000	.831	.93	11,700,000	B.
May.....	525,000	195,000	404,000	1.70	1.96	24,800,000	B.
June.....	573,000	494,000	534,000	2.25	2.51	31,800,000	B.
July.....	542,000	244,000	397,000	1.68	1.94	24,400,000	B.
August.....	237,000	157,000	202,000	.852	.98	12,400,000	B.
September.....	152,000	103,000	126,000	.532	.59	7,500,000	B.
The year.....	573,000	58,800	212,000	.895	12.14	154,000,000	
1883-84.							
October.....	100,000	79,000	90,800	.383	.44	5,580,000	B.
November.....	85,600	69,000	74,300	.313	.35	4,420,000	B.
December.....	84,500	64,400	73,500	.310	.36	4,520,000	B.
January.....	94,400	58,800	71,900	.303	.35	4,420,000	B.
February.....	163,000	45,800	71,900	.303	.33	4,140,000	B.
March.....	121,000	87,800	105,000	.443	.51	6,460,000	B.
April.....	286,000	117,000	203,000	.857	.96	12,100,000	B.
May.....	607,000	250,000	404,000	1.70	1.96	24,800,000	B.
June.....	698,000	588,000	648,000	2.73	3.05	38,600,000	B.
July.....	573,000	298,000	403,000	1.70	1.96	24,800,000	A.
August.....	300,000	194,000	255,000	1.08	1.24	15,700,000	A.
September.....	195,000	123,000	166,000	.700	.78	9,880,000	A.
The year.....	698,000	45,800	214,000	.903	12.29	155,000,000	
1884-85.							
October.....	150,000	112,000	133,000	.561	.65	8,180,000	A.
November.....	159,000	116,000	135,000	.570	.64	8,030,000	A.
December.....	110,000	44,300	80,600	.340	.39	4,960,000	B.
January.....	123,000	76,000	93,400	.394	.45	5,740,000	B.
February.....	190,000	95,400	164,000	.692	.72	9,110,000	A.
March.....	221,000	149,000	189,000	.797	.92	11,600,000	A.
April.....	290,000	215,000	259,000	1.09	1.22	15,400,000	A.
May.....	434,000	237,000	372,000	1.57	1.81	22,900,000	A.
June.....	482,000	388,000	445,000	1.88	2.10	26,500,000	A.
July.....	447,000	237,000	340,000	1.43	1.65	20,900,000	A.
August.....	233,000	183,000	203,000	.857	.99	12,500,000	A.
September.....	179,000	139,000	155,000	.654	.73	9,220,000	A.
The year.....	482,000	44,300	214,000	.903	12.27	155,000,000	
1885-86.							
October.....	149,000	96,700	122,000	.515	0.59	7,500,000	A.
November.....	115,000	92,800	103,000	.435	.49	6,130,000	A.
December.....	110,000	92,800	103,000	.435	.50	6,330,000	A.
January.....	203,000	64,400	101,000	.426	.49	6,210,000	A.
February.....	217,000	140,000	178,000	.751	.78	9,890,000	A.
March.....	134,000	109,000	122,000	.515	.59	7,500,000	A.
April.....	260,000	129,000	209,000	.882	.98	12,400,000	A.
May.....	597,000	239,000	342,000	1.44	1.66	21,000,000	A.
June.....	673,000	458,000	577,000	2.43	2.71	34,300,000	A.
July.....	456,000	266,000	351,000	1.48	1.71	21,600,000	A.
August.....	262,000	150,000	201,000	.848	.98	12,400,000	A.
September.....	147,000	101,000	125,000	.527	.59	7,440,000	A.
The year.....	673,000	64,400	211,000	.890	12.07	153,000,000	
1886-87.							
October.....	99,300	76,000	85,900	.362	.42	5,280,000	B.
November.....	78,000	62,800	69,700	.294	.33	4,150,000	B.
December.....	90,400	62,000	75,300	.318	.37	4,630,000	B.
January.....	122,000	86,800	99,100	.418	.48	6,090,000	B.
February.....	106,000	66,100	75,300	.318	.33	4,180,000	B.
March.....	258,000	73,000	176,000	.743	.86	10,800,000	A.
April.....	282,000	235,000	259,000	1.09	1.22	15,400,000	A.
May.....	720,000	319,000	422,000	1.78	2.05	25,900,000	A.
June.....	896,000	713,000	809,000	3.41	3.80	48,100,000	A.
July.....	760,000	403,000	585,000	2.47	2.85	36,000,000	A.
August.....	393,000	228,000	289,000	1.22	1.41	17,800,000	A.
September.....	221,000	128,000	171,000	.722	.81	10,200,000	A.
The year.....	896,000	62,000	260,000	1.10	14.93	189,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1887-88.							
October.....	126,000	99,300	114,000	0.481	0.55	7,010,000	A.
November.....	117,000	90,400	100,000	.422	.47	5,950,000	B.
December.....	115,000	88,000	99,200	.419	.48	6,100,000	B.
January.....	215,000	49,400	80,200	.338	.39	4,930,000	B.
February.....	190,000	123,000	144,000	.608	.66	8,280,000	A.
March.....	137,000	102,000	120,000	.506	.58	7,380,000	A.
April.....	306,000	128,000	189,000	.797	.89	11,200,000	A.
May.....	412,000	282,000	362,000	1.53	1.76	22,300,000	A.
June.....	564,000	420,000	515,000	2.17	2.42	30,600,000	A.
July.....	451,000	262,000	338,000	1.43	1.65	20,800,000	A.
August.....	256,000	190,000	213,000	.899	1.04	13,100,000	A.
September.....	188,000	120,000	153,000	.646	.72	9,100,000	A.
The year.....	564,000	49,400	202,000	.852	11.61	147,000,000	
1888-89.							
October.....	119,000	89,200	102,000	.430	.50	6,270,000	A.
November.....	109,000	82,300	93,200	.393	.44	5,550,000	B.
December.....	94,100	78,000	85,500	.361	.42	5,260,000	B.
January.....	76,000	62,800	66,400	.230	.32	4,080,000	B.
February.....	64,400	57,400	63,700	.269	.28	3,540,000	B.
March.....	110,000	63,600	88,700	.374	.43	5,450,000	B.
April.....	179,000	110,000	152,000	.641	.72	9,040,000	A.
May.....	294,000	188,000	254,000	1.07	1.23	15,600,000	A.
June.....	302,000	215,000	268,000	1.13	1.26	15,900,000	A.
July.....	213,000	167,000	183,000	.772	.89	11,300,000	A.
August.....	172,000	119,000	149,000	.629	.73	9,160,000	A.
September.....	120,000	78,000	96,400	.407	.45	5,740,000	B.
The year.....	302,000	57,400	134,000	.565	7.67	96,900,000	
1889-90.							
October.....	95,400	79,000	87,500	.369	.43	5,380,000	B.
November.....	88,000	69,000	77,400	.327	.36	4,610,000	B.
December.....	70,000	54,800	64,600	.273	.31	3,970,000	B.
January.....	67,000	41,900	51,400	.217	.25	3,160,000	C.
February.....	197,000	62,000	117,000	.494	.51	6,500,000	A.
March.....	179,000	59,600	120,000	.506	.58	7,380,000	A.
April.....	300,000	145,000	192,000	.810	.90	11,400,000	A.
May.....	633,000	325,000	559,000	2.36	2.72	34,400,000	A.
June.....	532,000	388,000	437,000	1.84	2.05	26,000,000	A.
July.....	381,000	248,000	326,000	1.38	1.59	20,000,000	A.
August.....	246,000	157,000	194,000	.819	.94	11,903,000	A.
September.....	152,000	90,400	121,000	.511	.57	7,200,000	A.
The year.....	633,000	41,900	196,000	.827	11.21	142,000,000	
1890-91.							
October.....	95,400	83,400	89,100	.376	.43	5,480,000	B.
November.....	84,500	73,000	77,600	.327	.36	4,620,000	B.
December.....	74,000	65,200	69,600	.294	.34	4,280,000	B.
January.....	72,000	60,400	65,900	.278	.32	4,050,000	B.
February.....	71,000	58,800	62,600	.264	.27	3,480,000	B.
March.....	108,000	57,400	73,700	.311	.36	4,530,000	B.
April.....	219,000	88,000	137,000	.578	.64	8,150,000	A.
May.....	441,000	222,000	342,000	1.44	1.66	21,000,000	A.
June.....	448,000	379,000	420,000	1.77	1.98	25,000,000	A.
July.....	370,000	254,000	306,000	1.29	1.49	18,800,000	A.
August.....	250,000	159,000	205,000	.865	1.00	12,600,000	A.
September.....	159,000	108,000	132,000	.557	.62	7,860,000	A.
The year.....	448,000	57,400	165,000	.696	9.47	120,000,000	
1891-92.							
October.....	108,000	80,100	88,300	.373	.43	5,430,000	B.
November.....	132,000	84,500	108,000	.456	.51	6,430,000	A.
December.....	110,000	90,400	99,800	.421	.49	6,140,000	B.
January.....	95,400	68,000	79,000	.333	.38	4,860,000	B.
February.....	84,700	66,200	73,000	.308	.33	4,200,000	B.
March.....	164,000	84,700	127,000	.536	.62	7,810,000	A.
April.....	177,000	128,000	153,000	.646	.72	9,100,000	A.
May.....	568,000	166,000	298,000	1.26	1.45	18,300,000	A.
June.....	607,000	481,000	544,000	2.30	2.57	32,400,000	A.
July.....	533,000	281,000	447,000	1.89	2.18	27,500,000	A.
August.....	278,000	160,000	210,000	.886	1.02	12,900,000	A.
September.....	159,000	131,000	145,000	.612	.68	8,630,000	A.
The year.....	607,000	66,200	198,000	.835	11.38	144,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1892-93.							
October.....	131,000	96,000	111,000	0.468	0.54	6,820,000	A.
November.....	118,000	91,000	98,200	.414	.46	5,840,000	B.
December.....	99,000	69,000	86,000	.363	.42	5,290,000	B.
January.....	93,000	69,800	77,700	.328	.38	4,780,000	B.
February.....	105,000	61,300	81,900	.346	.36	4,550,000	B.
March.....	115,000	63,400	71,000	.300	.35	4,370,000	B.
April.....	249,000	130,000	170,000	.717	.80	10,100,000	A.
May.....	613,000	252,000	441,000	1.86	2.14	27,100,000	A.
June.....	679,000	534,000	597,000	2.52	2.81	35,500,000	A.
July.....	528,000	390,000	465,000	1.96	2.26	28,600,000	A.
August.....	381,000	185,000	273,000	1.15	1.33	16,800,000	A.
September.....	181,000	120,000	150,000	.633	.71	8,930,000	A.
The year.....	679,000	61,300	219,000	.924	12.56	159,000,000	
1893-94.							
October.....	150,000	108,000	122,000	.515	.59	7,500,000	A.
November.....	170,000	107,000	142,000	.599	.67	8,450,000	A.
December.....	218,000	118,000	166,000	.700	.81	10,200,000	A.
January.....	219,000	102,000	145,000	.612	.71	8,920,000	A.
February.....	142,000	88,300	114,000	.481	.50	6,330,000	A.
March.....	284,000	113,000	163,000	.688	.79	10,000,000	A.
April.....	465,000	266,000	323,000	1.36	1.52	19,200,000	A.
May.....	1,020,000	395,000	575,000	2.43	2.80	35,400,000	A.
June.....	1,160,000	739,000	970,000	4.09	4.56	57,700,000	B.
July.....	716,000	376,000	553,000	2.33	2.69	34,000,000	A.
August.....	372,000	217,000	271,000	1.14	1.31	16,700,000	A.
September.....	217,000	137,000	175,000	.738	.82	10,400,000	A.
The year.....	1,160,000	88,300	311,000	1.31	17.77	225,000,000	
1894-95.							
October.....	139,000	125,000	133,000	.561	.65	8,180,000	A.
November.....	150,000	129,000	136,000	.574	.64	8,090,000	A.
December.....	140,000	88,000	114,000	.481	.55	7,010,000	A.
January.....	131,000	81,200	102,000	.430	.50	6,270,000	A.
February.....	132,000	80,100	94,000	.397	.41	5,220,000	B.
March.....	137,000	105,000	119,000	.502	.58	7,320,000	A.
April.....	276,000	143,000	182,000	.768	.86	10,800,000	A.
May.....	475,000	281,000	376,000	1.59	1.83	23,100,000	A.
June.....	459,000	342,000	381,000	1.61	1.80	22,700,000	A.
July.....	392,000	264,000	348,000	1.47	1.70	21,400,000	A.
August.....	260,000	148,000	206,000	.869	1.00	12,700,000	A.
September.....	149,000	108,000	129,000	.544	.61	7,680,000	A.
The year.....	475,000	80,100	194,000	.819	11.13	140,000,000	
1895-96.							
October.....	106,000	84,500	96,500	.407	.47	5,930,000	B.
November.....	85,600	74,000	78,600	.332	.37	4,680,000	B.
December.....	79,000	70,000	75,300	.318	.37	4,630,000	B.
January.....	125,000	70,000	90,000	.381	.44	5,550,000	B.
February.....	123,000	81,100	92,600	.391	.42	5,330,000	B.
March.....	212,000	103,000	134,000	.565	.65	8,240,000	A.
April.....	206,000	152,000	180,000	.760	.85	10,700,000	A.
May.....	426,000	205,000	268,000	1.13	1.30	16,500,000	A.
June.....	785,000	481,000	679,000	2.86	3.19	40,400,000	A.
July.....	778,000	386,000	639,000	2.70	3.11	39,300,000	A.
August.....	372,000	191,000	256,000	1.08	1.24	15,700,000	A.
September.....	191,000	114,000	157,000	.662	.74	9,340,000	A.
The year.....	785,000	70,000	229,000	.966	13.15	166,000,000	
1896-97.							
October.....	110,000	78,000	89,300	.377	.43	5,490,000	B.
November.....	194,000	78,000	122,000	.515	.57	7,260,000	A.
December.....	212,000	102,000	163,000	.688	.79	10,000,000	A.
January.....	134,000	98,000	115,000	.485	.56	7,070,000	A.
February.....	155,000	98,000	123,000	.519	.54	6,830,000	A.
March.....	208,000	84,500	109,000	.460	.53	6,700,000	A.
April.....	501,000	130,000	299,000	1.26	1.41	17,800,000	A.
May.....	780,000	447,000	624,000	2.63	3.03	38,400,000	A.
June.....	739,000	445,000	540,000	2.28	2.54	32,100,000	A.
July.....	451,000	263,000	372,000	1.57	1.81	22,900,000	A.
August.....	255,000	192,000	210,000	.886	1.02	12,900,000	A.
September.....	188,000	102,000	137,000	.578	.64	8,150,000	A.
The year.....	780,000	78,000	243,000	1.03	13.87	176,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1897-98.							
October.....	106,000	85,600	97,100	0.410	0.47	5,970,000	A.
November.....	165,000	82,000	114,000	.481	.54	6,780,000	A.
December.....	168,000	117,000	141,000	.595	.69	8,670,000	A.
January.....	155,000	84,700	113,000	.477	.55	6,950,000	A.
February.....	260,000	82,900	147,000	.620	.65	8,160,000	A.
March.....	181,000	113,000	147,000	.620	.71	9,040,000	A.
April.....	337,000	111,000	201,000	.848	.95	12,000,000	A.
May.....	594,000	328,000	420,000	1.77	2.04	25,800,000	A.
June.....	649,000	547,000	603,000	2.54	2.83	35,900,000	A.
July.....	541,000	300,000	399,000	1.68	1.94	24,500,000	A.
August.....	291,000	202,000	237,000	1.00	1.15	14,600,000	A.
September.....	199,000	116,000	143,000	.603	.67	8,510,000	A.
The year.....	649,000	82,000	230,000	.970	13.19	167,000,000	
1898-99.							
October.....	114,000	85,600	97,400	.411	.47	5,990,000	A.
November.....	87,400	78,600	83,600	.353	.39	4,970,000	A.
December.....	84,700	58,000	68,500	.289	.33	4,210,000	B.
January.....	142,000	71,400	98,500	.416	.48	6,060,000	A.
February.....	130,000	80,200	109,000	.460	.48	6,050,000	A.
March.....	126,000	94,000	106,000	.447	.52	6,520,000	A.
April.....	245,000	120,000	192,000	.810	.90	11,400,000	A.
May.....	469,000	201,000	309,000	1.30	1.50	19,000,000	A.
June.....	787,000	471,000	638,000	2.69	3.00	38,000,000	A.
July.....	727,000	447,000	614,000	2.59	2.99	37,800,000	A.
August.....	435,000	232,000	307,000	1.30	1.50	18,900,000	A.
September.....	230,000	168,000	193,000	.814	.91	11,500,000	A.
The year.....	787,000	58,000	235,000	.992	13.47	170,000,000	
1899-1900.							
October.....	168,000	125,000	140,000	.591	.68	8,610,000	A.
November.....	166,000	112,000	130,000	.549	.61	7,740,000	A.
December.....	194,000	132,000	157,000	.662	.76	9,650,000	A.
January.....	251,000	138,000	168,000	.709	.82	10,300,000	A.
February.....	142,000	103,000	125,000	.527	.55	6,940,000	A.
March.....	230,000	132,000	187,000	.789	.91	11,500,000	A.
April.....	303,000	216,000	272,000	1.15	1.28	16,200,000	A.
May.....	536,000	291,000	450,000	1.90	2.19	27,700,000	A.
June.....	441,000	381,000	411,000	1.73	1.93	24,500,000	A.
July.....	437,000	239,000	323,000	1.36	1.57	19,900,000	A.
August.....	239,000	152,000	187,000	.789	.91	11,500,000	A.
September.....	157,000	120,000	136,000	.574	.64	8,090,000	A.
The year.....	536,000	103,000	224,000	.945	12.85	163,000,000	
1900-1901.							
October.....	137,000	99,000	114,000	.481	.55	7,010,000	A.
November.....	142,000	106,000	125,000	.527	.59	7,440,000	A.
December.....	180,000	111,000	138,000	.582	.67	8,480,000	A.
January.....	160,000	108,000	129,000	.544	.63	7,930,000	A.
February.....	206,000	81,100	122,000	.515	.54	6,780,000	A.
March.....	269,000	152,000	187,000	.789	.91	11,500,000	A.
April.....	211,000	137,000	165,000	.696	.78	9,820,000	A.
May.....	646,000	205,000	429,000	1.81	2.09	26,400,000	A.
June.....	662,000	405,000	516,000	2.18	2.43	30,700,000	A.
July.....	412,000	286,000	340,000	1.43	1.65	20,900,000	A.
August.....	281,000	166,000	219,000	.924	1.07	13,500,000	A.
September.....	165,000	99,000	132,000	.557	.62	7,850,000	A.
The year.....	662,000	81,100	219,000	.924	12.53	158,000,000	
1901-2.							
October.....	101,000	77,000	85,800	.362	.42	5,280,000	A.
November.....	94,000	77,000	83,900	.354	.40	4,990,000	A.
December.....	114,000	77,800	92,500	.390	.45	5,690,000	A.
January.....	102,000	70,600	88,300	.373	.43	5,430,000	A.
February.....	140,000	58,000	101,000	.426	.44	5,610,000	A.
March.....	141,000	91,000	110,000	.464	.53	6,760,000	A.
April.....	194,000	88,300	143,000	.603	.67	8,510,000	A.
May.....	635,000	177,000	358,000	1.51	1.74	22,000,000	A.
June.....	644,000	432,000	537,000	2.27	2.53	32,000,000	A.
July.....	483,000	323,000	407,000	1.72	1.98	25,000,000	A.
August.....	315,000	176,000	231,000	.975	1.12	14,200,000	A.
September.....	170,000	99,000	125,000	.527	.59	7,440,000	A.
The year.....	644,000	58,000	197,000	.831	11.30	143,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1902-3.							
October.....	95,000	76,200	83,600	0.353	0.41	5,140,000	A.
November.....	93,000	75,400	84,800	.358	.40	5,050,000	A.
December.....	96,000	72,200	84,800	.358	.41	5,210,000	A.
January.....	178,000	85,600	117,000	.494	.57	7,190,000	A.
February.....	125,000	73,800	87,700	.370	.39	4,870,000	A.
March.....	192,000	74,600	97,400	.411	.47	5,990,000	A.
April.....	252,000	160,000	191,000	.806	.90	11,400,000	A.
May.....	374,000	240,000	309,000	1.30	1.50	19,000,000	A.
June.....	787,000	385,600	683,000	2.88	3.21	40,600,000	A.
July.....	642,000	291,000	426,000	1.80	2.08	26,200,000	A.
August.....	286,000	174,000	216,000	.911	1.05	13,300,000	A.
September.....	172,000	130,000	149,000	.629	.70	8,870,000	A.
The year.....	787,000	72,200	211,000	.890	12.09	153,000,000	
1903-4.							
October.....	173,000	135,000	155,000	.654	.75	9,530,000	A.
November.....	142,000	123,000	133,000	.561	.63	7,910,000	A.
December.....	135,000	101,000	122,000	.515	.59	7,500,000	A.
January.....	108,000	89,200	99,600	.420	.48	6,120,000	A.
February.....	165,000	80,200	100,000	.422	.46	5,750,000	A.
March.....	248,000	118,000	168,000	.709	.82	10,300,000	A.
April.....	479,000	164,000	337,000	1.42	1.58	20,100,000	A.
May.....	629,000	445,000	508,000	2.14	2.47	31,200,000	A.
June.....	602,000	467,000	559,000	2.36	2.63	33,300,000	A.
July.....	467,000	261,000	397,000	1.68	1.94	24,400,000	A.
August.....	254,000	147,000	200,000	.844	.97	12,800,000	A.
September.....	143,000	98,000	122,000	.515	.57	7,260,000	A.
The year.....	629,000	80,200	242,000	1.02	13.89	176,000,000	
1904-5.							
October.....	96,000	75,400	84,700	.357	.41	5,210,000	A.
November.....	78,600	68,300	72,600	.306	.34	4,320,000	B.
December.....	78,600	66,900	71,800	.303	.35	4,410,000	B.
January.....	80,200	57,400	66,500	.281	.32	4,090,000	B.
February.....	75,400	52,600	62,900	.265	.28	3,490,000	B.
March.....	130,000	78,600	106,000	.447	.52	6,520,000	A.
April.....	188,000	114,000	131,000	.553	.62	7,800,000	A.
May.....	252,000	172,000	206,000	.869	1.00	12,700,000	A.
June.....	412,000	269,000	357,000	1.51	1.68	21,200,000	A.
July.....	311,000	204,000	246,000	1.04	1.20	15,100,000	A.
August.....	205,000	124,000	175,000	.738	.85	10,800,000	A.
September.....	121,000	77,800	95,500	.403	.45	5,680,000	A.
The year.....	412,000	52,600	140,000	.591	8.02	101,000,000	
1905-6.							
October.....	115,000	92,000	103,000	.435	.50	6,330,000	A.
November.....	93,000	73,800	79,000	.333	.37	4,700,000	B.
December.....	76,200	62,700	67,400	.284	.33	4,140,000	B.
January.....	72,200	59,200	63,500	.268	.31	3,900,000	B.
February.....	102,000	64,100	76,700	.324	.34	4,260,000	B.
March.....	157,000	73,800	92,200	.389	.45	5,670,000	A.
April.....	264,000	165,000	203,000	.857	.96	12,100,000	A.
May.....	345,000	258,000	299,000	1.26	1.45	18,400,000	A.
June.....	374,000	278,000	332,000	1.40	1.56	19,800,000	A.
July.....	300,000	229,000	278,000	1.17	1.35	17,100,000	A.
August.....	223,000	125,000	168,000	.709	.82	10,300,000	A.
September.....	131,000	100,000	115,000	.485	.54	6,840,000	A.
The year.....	374,000	59,200	157,000	.662	8.98	114,000,000	
1906-7.							
October.....	108,000	85,600	91,700	.387	.45	5,640,000	A.
November.....	260,000	92,000	136,000	.574	.64	8,090,000	A.
December.....	155,000	105,000	123,000	.519	.60	7,560,000	A.
January.....	142,000	77,800	105,000	.443	.51	6,460,000	A.
February.....	212,000	113,000	158,000	.667	.69	8,780,000	A.
March.....	251,000	129,000	167,000	.705	.81	10,300,000	A.
April.....	289,000	156,000	234,000	.987	1.10	13,900,000	A.
May.....	522,000	248,000	379,000	1.60	1.84	23,300,000	A.
June.....	587,000	481,000	532,000	2.24	2.50	31,700,000	A.
July.....	532,000	305,000	431,000	1.82	2.10	26,500,000	A.
August.....	305,000	178,000	230,000	.970	1.12	14,100,000	A.
September.....	180,000	135,000	162,000	.684	.76	9,640,000	A.
The year.....	587,000	77,800	229,000	.966	13.12	166,000,000	

Monthly discharge of Columbia River at The Dalles, Oreg., for 1878-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1907-8.							
October.....	135,000	96,000	116,000	0.489	0.56	7,130,000	A.
November.....	95,000	83,800	88,100	.372	.42	5,240,000	A.
December.....	118,000	77,800	88,300	.373	.43	5,430,000	A.
January.....	87,400	66,200	75,200	.317	.37	4,620,000	B.
February.....	69,800	59,900	66,200	.279	.30	3,810,000	B.
March.....	225,000	69,800	116,000	.489	.56	7,130,000	A.
April.....	303,000	110,000	183,000	.772	.86	10,900,000	A.
May.....	401,000	269,000	344,000	1.45	1.67	21,200,000	A.
June.....	653,000	399,000	537,000	2.27	2.53	32,000,000	A.
July.....	511,000	316,000	413,000	1.74	2.01	25,400,000	A.
August.....	310,000	159,000	204,000	.861	.99	12,500,000	A.
September.....	155,000	102,000	121,000	.511	.57	7,200,000	A.
The year.....	653,000	59,900	196,000	.827	11.27	143,000,000	
1908-9.							
October.....	102,000	83,800	90,400	.381	.44	5,560,000	A.
November.....	97,000	82,900	88,000	.371	.41	5,240,000	A.
December.....	91,000	66,900	78,300	.330	.38	4,810,000	B.
January.....	275,000	63,400	107,000	.451	.52	6,580,000	A.
February.....	140,000	84,700	103,000	.435	.45	5,720,000	A.
March.....	130,000	92,000	108,000	.456	.53	6,640,000	A.
April.....	187,000	132,000	150,000	.633	.71	8,930,000	A.
May.....	388,000	173,000	231,000	.975	1.12	14,200,000	A.
June.....	675,000	395,000	592,000	2.50	2.79	35,200,000	A.
July.....	555,000	284,000	422,000	1.78	2.05	25,900,000	A.
August.....	283,000	146,000	203,000	.857	.99	12,500,000	A.
September.....	154,000	106,000	129,000	.544	.61	7,680,000	A.
The year.....	675,000	63,400	192,000	.810	11.00	139,000,000	
1909-10.							
October.....	105,000	91,000	101,000	.426	.49	6,210,000	A.
November.....	220,000	90,100	128,000	.540	.60	7,620,000	A.
December.....	198,000	97,000	141,000	.595	.69	8,670,000	A.
January.....	125,000	86,500	108,000	.456	.53	6,640,000	A.
February.....	122,000	79,400	92,400	.390	.41	5,130,000	A.
March.....	392,000	136,000	272,000	1.15	1.33	16,700,000	A.
April.....	485,000	249,000	322,000	1.36	1.52	19,200,000	A.
May.....	566,000	433,000	493,000	2.08	2.40	30,300,000	A.
June.....	485,000	311,000	397,000	1.68	1.87	23,600,000	A.
July.....	307,000	197,000	238,000	1.00	1.15	14,600,000	A.
August.....	197,000	125,000	160,000	.675	.78	9,840,000	A.
September.....	121,000	81,100	93,200	.393	.44	5,550,000	A.
The year.....	566,000	79,400	213,000	.899	12.21	154,000,000	

Yearly discharge of Columbia River at The Dalles, Oreg.

[Drainage area 237,000 square miles.]

Year ending Sept. 30—	Discharge in second-feet.						Run-off.		Per cent vari- ation from mean.
	Maxi- mum.	Mini- mum.	Highest monthly mean.	Lowest monthly mean.	Mean.	Per square mile.	Depth in inches on drain- age area.	Total in acre-feet.	
1879.....	643,000	59,600	612,000	65,900	242,000	1.02	13.85	175,000,000	+14.1
1880.....	914,000	68,300	793,000	85,400	264,000	1.11	15.18	192,000,000	+24.5
1881.....	598,000	73,800	546,000	80,700	252,000	1.06	14.46	183,000,000	+18.8
1882.....	883,000	60,400	770,000	66,700	232,000	.979	13.27	168,000,000	+ 9.4
1883.....	573,000	58,800	534,000	87,100	212,000	.895	12.14	154,000,000	.0
1884.....	698,000	45,800	648,000	71,900	214,000	.903	12.29	155,000,000	+ .9
1885.....	482,000	44,300	445,000	80,600	214,000	.903	12.27	155,000,000	+ .9
1886.....	673,000	64,400	577,000	101,000	211,000	.890	12.07	153,000,000	- .5
1887.....	896,000	62,000	809,000	69,700	260,000	1.10	14.93	189,000,000	+22.6
1888.....	564,000	49,400	515,000	80,200	202,000	.832	11.61	147,000,000	- 4.7
1889.....	302,000	57,400	268,000	63,700	134,000	.565	7.67	96,900,000	-36.8
1890.....	633,000	41,900	559,000	51,400	196,000	.827	11.21	142,000,000	- 7.6
1891.....	448,000	57,400	420,000	62,600	165,000	.696	9.47	120,000,000	-22.1
1892.....	607,000	66,200	544,000	73,000	198,000	.835	11.38	144,000,000	- 6.6
1893.....	679,000	61,300	597,000	71,000	219,000	.924	12.56	159,000,000	+ 3.3
1894.....	1,160,000	88,300	970,000	114,000	311,000	1.31	17.77	225,000,000	+46.6
1895.....	475,000	80,100	381,000	94,000	194,000	.819	11.13	140,000,000	- 8.5
1896.....	785,000	70,000	679,000	75,300	229,000	.966	13.15	166,000,000	+ 8.0
1897.....	780,000	78,000	624,000	109,000	243,000	1.03	13.87	176,000,000	+14.6
1898.....	649,000	82,000	603,000	97,100	230,000	.970	13.19	167,000,000	+ 8.5
1899.....	787,000	58,000	638,000	68,500	235,000	.992	13.47	170,000,000	+10.8
1900.....	536,000	103,000	450,000	125,000	224,000	.945	12.85	163,000,000	+ 5.7
1901.....	662,000	81,000	516,000	114,000	219,000	.924	12.53	158,000,000	+ 3.3
1902.....	644,000	58,000	537,000	83,900	197,000	.831	11.30	143,000,000	- 7.1
1903.....	787,000	72,200	683,000	83,600	211,000	.890	12.09	153,000,000	- .5
1904.....	629,000	80,200	559,000	99,600	242,000	1.02	13.89	176,000,000	+14.1
1905.....	412,000	52,600	357,000	62,900	140,000	.591	8.02	101,000,000	-33.9
1906.....	374,000	59,200	332,000	63,500	157,000	.662	8.98	114,000,000	-25.9
1907.....	587,000	77,800	532,000	91,700	229,000	.966	13.12	166,000,000	+ 8.0
1908.....	653,000	59,900	537,000	75,200	196,000	.827	11.27	143,000,000	- 7.6
1909.....	675,000	63,400	592,000	78,300	192,000	.810	11.00	139,000,000	- 9.4
1910.....	566,000	79,400	493,000	92,400	213,000	.899	12.21	154,000,000	+ .5
The period, 1879-1914....	1,160,000	41,900	970,000	51,400	212,000	a.895	a12.18	a154,000,000	.....

a Mean for period.

Snake River Basin.

GENERAL FEATURES.

Snake River, the largest tributary of the Columbia, rises among the high peaks of the Rocky Mountains in Yellowstone National Park, western Wyoming, and eastern Idaho, heading in the divide from which streams flow northward and eastward into the Missouri, southward to the Colorado and the lakes of the Great Basin, and westward to the Columbia. From Shoshone, Lewis, and Hart Lakes, in Yellowstone National Park, the river flows southward, broadening into Jackson Lake (4 miles wide and 18 miles long) and passing through Jackson Valley (8 miles wide and 40 miles long), beyond which, near the Idaho-Wyoming line, it enters a long canyon. In the southern part of Fremont County, Idaho, it receives Henrys Fork, below which it flows southward and westward across Idaho to a point near Homedale, near the Oregon-Idaho line, where it turns abruptly northward and forms for about 170 miles the boundary between Idaho and Oregon, and for 30 miles more that between Idaho and Washington. At Lewiston it crosses into Washington, flows northwest, west, and southwest, and joins the Columbia near Pasco.

The principal tributaries of the Snake in Oregon are Owyhee, Malheur, Burnt, and Powder rivers, Pine Creek, Imnaha, and Grande Ronde rivers.

Owyhee River Drainage Basin.

GENERAL FEATURES.

Owyhee River rises in the Humboldt National Forest in the north-central part of Nevada, flows north, then northwest across the corner of Idaho and into Oregon, where it turns abruptly and flows northeastward to its junction with Snake River, near Nyssa, Oreg., exactly opposite the mouth of Boise River in Idaho. The total length of the river is about 220 miles, and the drainage area comprises 11,100 square miles.

The country drained is an exceedingly arid desert, the annual precipitation ranging from 6 to 9 inches, the larger part occurring as snowfall. Forests are entirely lacking except on the extreme headwaters, and even there they are small and the trees are those characteristic of arid sections. The general elevation of the river basin is about 4,000 feet, and the altitudes have but little effect on the precipitation. The streams are frequently frozen for a considerable period during the winter months, so that records for this part of the year are subject to inaccuracies. The low-water flow of this stream at the mouth is nearly all taken by a large canal to irrigate lands lying between Owyhee and Malheur rivers. On the upper stretches of the river conditions are favorable for impounding the flood and winter flows for irrigation during the summer months, one large reservoir, the Duncan Ferry, having been surveyed by the United States Reclamation Service.

OWYHEE RIVER AT OWYHEE, OREG.

Location.—In sec. 2, T. 21 S., R. 46 E., at highway bridge half a mile above Owyhee post office and 3 miles above mouth of stream.

Records presented.—March 26, 1890, to December 31, 1893; January 1, 1895, to May 15, 1897; August 27, 1903, to September 30, 1910.

Drainage area.—11,100 square miles.

Gage.—Chain gage used since July 28, 1904; inclined staff previous to that date.

Datum of gage unchanged since 1903 but bears no determined relation to datum of gages used prior to 1897; all readings before 1903 refer to the same datum.

Channel.—Sand and gravel; somewhat shifting; riffle control 200 yards below the gage shifts only during floods.

Discharge measurements.—Made from the bridge or by wading.

Winter flow.—Stream icebound for short periods; discharge relation at times somewhat affected.

Diversions.—Owyhee canal diverts water about 6 miles above station; practically the entire low-water flow is used for irrigation, and the discharge measured at the station at such times is mostly seepage water. Record was kept of the flow of the canal during 1903 to 1905. (See p. 86.) Considerable water also diverted for irrigation over entire basin.

Accuracy.—Records as a whole are good, but those for 1891 to 1893, during which years no measurements were made, are subject to considerable uncertainty.

Discharge measurements of Owyhee River at Owyhee, Oreg., in 1890, 1894–1897, 1903–1908.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1890.		<i>Feet.</i>	<i>Sec. ft.</i>	1904.		<i>Feet.</i>	<i>Sec. ft.</i>
Mar. 28	Smith & Kimmel.....	5.80	5,950	Apr. 18	H. D. Newell.....	6.70	5,840
Apr. 14	F. M. Smith.....	5.95	6,680	May 10	Murphy and Sawyer...	4.85	2,160
25	Smith & Kimmel.....	6.10	6,940	June 18	Torkelson and Sawyer..	3.20	452
May 3	do.....	6.10	7,100	July 2	M. W. Torkelson.....	2.45	136
12	do.....	7.40	11,600	Sept. 28 ^b	Torkelson and Sawyer..	2.00	34
20	do.....	5.0	4,790	Sept. 18	E. N. Smith.....	1.90	16
June 7	W. B. Kimmel.....	3.5	2,110	Oct. 12	do.....	2.50	168
17	do.....	2.7	1,100				
25	do.....	2.35	756	1905.			
July 4	do.....	2.10	589	Jan. 26	Smith and Johnson.....	3.50	709
14	do.....	1.70	363	Mar. 6	Smith and Griffin.....	3.69	862
23	do.....	1.50	273	13	P. H. Johnson.....	3.90	1,010
30	do.....	1.35	209	25	Johnson and Smith.....	3.88	1,030
Aug. 13	do.....	1.20	145	Apr. 14	Smith and Griffin.....	3.90	966
1894.				May 12	Griffin and Hall.....	3.70	874
Dec. 8	A. P. Davis.....	1.40	307	June 6	E. N. Smith.....	3.55	710
1895.				July 3	do.....	3.01	362
Mar. 25	V. C. Tompkins.....	2.40	773	17 ^b	do.....	2.38	104
June 30	do.....	1.30	213	Aug. 15 ^b	Yates and Smith.....	1.93	16
July 20	G. F. Sherman.....	1.00	64	Sept. 12 ^b	E. N. Smith.....	1.89	7.4
1896.				Oct. 13 ^b	W. C. Sawyer.....	1.90	8.8
Jan. 25	G. F. Sherman.....	1.60	408	Nov. 9	Sawyer and Hall.....	2.03	25
June 19	L. B. Kendall.....	3.20	1,750	Dec. 28	R. S. Hall.....	2.52	131
Aug. 8	C. C. Babb.....	1.00	165		R. S. Hall.....	3.05	212
1897.				1906.			
Apr. 15	F. S. Shirley.....	7.60	11,500	Mar. 8	R. S. Hall.....	3.58	760
1903.				31	do.....	8.32	9,620
Aug. 27	J. H. Lewis.....	1.87	7	Apr. 13	do.....	7.61	7,780
Sept. 27	do.....	2.05	37	27	do.....	6.72	5,440
Dec. 17	do.....	2.75	a 263	June 13	do.....	5.02	2,290
1904				Nov. 29 ^c	Stevens and McGlashan	2.80	231
Mar. 13	J. H. Lewis.....	7.00	a 6,200	1907.			
14	do.....	6.60	a 5,270	Apr. 25	I. E. Oakes.....	6.30	4,510
				1908.			
				May 28	H. D. McGlashan.....	3.34	579

^a No water in Owyhee Canal.

^b Wading above bridge.

^c Slush ice; right channel entirely frozen.

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890.												
1.....							6.45	5.9	4.0	2.1	1.3	1.2
2.....							6.05	6.0	3.9	2.1	1.3	1.2
3.....							5.85	6.1	3.8	2.1	1.3	1.2
4.....							5.75	6.1	3.8	2.0	1.3	1.2
5.....							6.0	6.1	3.75	2.0	1.3	1.2
6.....							6.05	6.1	3.6	2.0	1.3	1.2
7.....							6.15	6.0	3.5	1.9	1.2	1.2
8.....							6.1	5.9	3.4	1.9	1.2	1.2
9.....							5.95	5.85	3.3	1.8	1.2	1.2
10.....							5.65	6.25	3.2	1.8	1.2	1.2
11.....							5.55	6.55	3.1	1.8	1.2	1.2
12.....							6.0	7.3	3.0	1.8	1.2	1.2
13.....							5.95	7.0	2.9	1.7	1.2	1.2
14.....							5.85	6.4	2.8	1.7	1.2	1.2
15.....							5.75	5.9	2.75	1.6	1.2	1.2
16.....							5.6	5.65	2.7	1.6	1.2	1.2
17.....							5.55	5.35	2.65	1.55	1.2	1.2
18.....							5.5	5.15	2.6	1.5	1.2	1.2
19.....							5.8	5.1	2.6	1.5	1.2	1.2
20.....							6.0	5.0	2.5	1.5	1.2	1.2
21.....							6.1	4.9	2.5	1.5	1.2	1.2
22.....							6.1	4.8	2.5	1.5	1.2	1.2
23.....							6.1	4.8	2.4	1.4	1.2	1.2
24.....							6.1	4.8	2.35	1.4	1.2	1.2
25.....							6.1	4.7	2.3	1.4	1.2	1.2
26.....						5.9	6.05	4.6	2.3	1.4	1.2	1.2
27.....						5.7	6.0	4.5	2.2	1.4	1.2	1.2
28.....						5.9	5.9	4.4	2.2	1.4	1.2	1.2
29.....						5.55	5.9	4.3	2.2	1.3	1.3	1.2
30.....						5.45	5.9	4.2	2.2	1.3	1.3	1.2
31.....						6.2		4.1		1.3	1.2	
1890-91.												
1.....	1.2	1.3	1.5	1.7	1.9	4.85	4.3	4.0	3.4	2.0	1.5	1.7
2.....	1.2	1.3	1.5	1.7	1.9	4.75	4.3	3.85	3.45	1.9	1.5	1.7
3.....	1.2	1.3	1.5	1.7	1.9	4.55	4.35	3.8	3.5	1.9	1.5	1.7
4.....	1.2	1.3	1.5	1.7	1.9	4.0	4.45	3.8	3.45	1.9	1.5	1.7
5.....	1.2	1.3	1.5	1.7	1.9	4.0	4.55	3.8	3.4	2.0	1.5	1.7
6.....	1.2	1.3	1.5	1.7	1.9	3.8	4.65	3.7	3.35	2.25	1.5	1.7
7.....	1.2	1.3	1.6	1.7	1.9	3.9	4.7	3.7	3.15	2.35	1.5	1.7
8.....	1.2	1.3	1.6	1.7	2.0	4.0	4.6	3.65	3.0	2.4	1.5	1.7
9.....	1.2	1.3	1.6	1.7	2.0	4.15	4.6	3.6	3.0	2.3	1.5	1.7
10.....	1.2	1.3	1.6	1.7	2.0	4.4	4.45	4.05	3.0	2.3	1.5	1.6
11.....	1.2	1.3	1.6	1.6	2.0	4.85	4.35	4.25	2.9	2.3	1.5	1.6
12.....	1.2	1.3	1.6	1.6	2.0	4.55	4.55	4.45	2.9	2.2	1.5	1.6
13.....	1.2	1.3	1.6	1.6	2.0	4.4	4.75	4.85	2.9	2.1	1.5	1.6
14.....	1.2	1.3	1.5	1.6	2.0	3.95	5.1	5.0	2.8	2.0	1.5	1.6
15.....	1.2	1.3	1.5	1.6	2.2	4.2	5.75	5.0	2.85	1.9	1.5	1.6
16.....	1.2	1.4	1.5	1.6	2.2	4.35	5.9	4.85	2.9	1.9	1.5	1.6
17.....	1.2	1.4	1.5	1.6	2.3	4.5	6.35	4.65	2.9	1.85	1.5	1.6
18.....	1.2	1.4	1.5	1.7	2.3	4.65	6.75	4.6	2.85	1.75	1.4	1.6
19.....	1.2	1.4	1.5	1.7	2.3	4.55	7.0	4.55	2.7	1.8	1.4	1.6
20.....	1.2	1.4	1.5	1.7	2.3	4.4	6.7	4.45	2.75	1.7	1.4	1.5
21.....	1.2	1.4	1.6	1.7	2.3	4.35	6.4	4.35	2.45	1.7	1.4	1.5
22.....	1.2	1.4	1.6	1.7	2.4	4.2	5.95	4.25	2.4	1.7	1.4	1.5
23.....	1.2	1.4	1.6	1.7	2.65	4.1	5.75	4.15	2.35	1.7	1.4	1.5
24.....	1.2	1.4	1.6	1.7	3.5	4.0	5.45	4.0	2.2	1.7	1.4	1.5
25.....	1.2	1.4	1.6	1.8	3.55	4.0	4.9	3.9	2.15	1.7	1.4	1.5
26.....	1.2	1.4	1.6	1.8	3.8	3.9	4.65	3.9	2.05	1.6	1.4	1.5
27.....	1.2	1.4	1.6	1.8	4.0	3.9	4.5	3.8	2.0	1.6	1.4	1.5
28.....	1.2	1.4	1.7	1.8	4.25	3.8	4.4	3.8	2.0	1.55	1.4	1.5
29.....	1.2	1.4	1.7	1.8		4.05	4.3	3.8	2.0	1.5	1.4	1.5
30.....	1.2	1.5	1.7	1.8		4.2	4.0	3.65	2.0	1.5	1.7	1.5
31.....	1.2		1.7	1.8		4.25		3.45		1.5	1.7	

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891-92.												
1.....	1.5	1.7	1.6	1.6	1.6	2.75	6.3	8.4	5.8	2.7	2.3	2.1
2.....	1.5	1.7	1.6	1.6	1.6	2.5	6.3	8.3	5.6	2.7	2.3	2.1
3.....	1.5	1.7	1.6	1.6	1.6	2.4	6.4	8.55	5.45	2.7	2.2	2.1
4.....	1.6	1.7	1.6	1.6	1.6	2.2	6.5	8.6	5.25	2.7	2.2	2.0
5.....	1.6	1.7	1.6	1.6	1.6	2.2	6.6	8.6	5.0	2.7	2.2	2.0
6.....	1.6	1.7	1.6	1.6	1.6	2.55	6.8	8.55	4.9	2.7	2.2	2.0
7.....	1.6	1.7	1.6	1.6	1.6	2.85	6.9	8.45	4.9	2.7	2.2	2.0
8.....	1.6	1.8	1.6	1.6	1.6	3.05	7.05	8.4	4.8	2.7	2.2	2.0
9.....	1.6	1.8	1.6	1.6	1.6	3.2	7.2	8.4	4.7	2.7	2.2	2.0
10.....	1.6	1.8	1.6	1.6	1.6	3.3	7.4	8.3	4.7	2.6	2.2	2.0
11.....	1.6	1.8	1.6	1.6	1.6	3.45	7.5	8.2	4.6	2.6	2.2	2.0
12.....	1.6	1.8	1.6	1.6	1.6	3.85	7.6	8.2	4.5	2.6	2.2	2.0
13.....	1.6	1.8	1.6	1.6	1.6	4.15	7.7	8.1	4.4	2.6	2.2	2.0
14.....	1.6	1.8	1.6	1.6	1.95	4.3	7.8	8.0	4.2	2.6	2.1	2.0
15.....	1.6	1.8	1.6	1.6	2.85	4.45	7.85	7.9	4.1	2.6	2.1	2.0
16.....	1.6	1.8	1.6	1.6	3.1	4.65	8.1	7.9	3.9	2.5	2.1	2.0
17.....	1.6	1.8	1.6	1.6	3.7	4.85	8.45	7.8	3.9	2.5	2.1	2.0
18.....	1.6	1.8	1.6	1.6	4.75	5.1	8.65	7.75	3.9	2.5	2.1	2.0
19.....	1.6	1.8	1.6	1.6	4.45	5.45	8.8	7.7	3.0	2.5	2.1	2.0
20.....	1.6	1.8	1.6	1.6	3.95	5.8	9.0	7.6	2.9	2.5	2.1	2.0
21.....	1.6	1.8	1.6	1.6	3.45	5.9	9.0	7.6	2.9	2.5	2.1	2.0
22.....	1.6	1.7	1.6	1.6	3.45	5.8	8.9	7.5	2.9	2.5	2.1	2.0
23.....	1.6	1.7	1.6	1.6	3.1	5.75	8.9	7.5	2.9	2.5	2.1	2.0
24.....	1.6	1.7	1.6	1.6	3.35	5.6	8.8	7.4	2.9	2.4	2.1	2.0
25.....	1.7	1.7	1.6	1.6	3.35	5.6	8.7	7.25	2.8	2.4	2.1	2.0
26.....	1.7	1.7	1.6	1.6	3.3	5.5	8.7	7.0	2.8	2.4	2.1	2.0
27.....	1.7	1.7	1.6	1.6	3.15	5.65	8.6	6.8	2.8	2.4	2.1	2.0
28.....	1.7	1.7	1.6	1.6	3.0	5.8	8.5	6.7	2.8	2.4	2.1	2.0
29.....	1.7	1.6	1.6	1.6	2.8	6.05	8.4	6.45	2.8	2.4	2.1	2.0
30.....	1.7	1.6	1.6	1.6	-----	6.2	8.4	6.15	2.8	2.4	2.1	2.0
31.....	1.7	-----	1.6	1.6	-----	6.3	-----	6.0	-----	2.3	2.1	-----
1892-93.												
1.....	2.0	2.3	2.4	2.4	2.5	2.8	5.9	6.85	3.5	2.9	2.7	2.4
2.....	2.1	2.3	2.4	2.4	2.5	2.8	6.05	7.0	3.4	2.8	2.7	2.4
3.....	2.1	2.3	2.4	2.4	2.5	2.8	6.2	7.55	3.4	2.8	2.7	2.4
4.....	2.1	2.3	2.4	2.4	2.5	2.8	6.45	7.85	3.25	2.8	2.7	2.6
5.....	2.1	2.3	2.4	2.4	2.6	2.9	6.75	8.05	3.2	2.8	2.7	2.6
6.....	2.1	2.4	2.4	2.4	2.6	2.9	6.8	8.2	3.2	2.8	2.6	2.6
7.....	2.1	2.4	2.4	2.4	2.6	2.9	6.9	8.0	3.2	2.8	2.6	2.6
8.....	2.1	2.4	2.4	2.4	2.6	2.9	7.05	8.0	3.2	2.8	2.6	2.6
9.....	2.1	2.4	2.4	2.4	2.6	2.9	7.1	7.55	3.2	2.8	2.6	2.6
10.....	2.1	2.4	2.4	2.4	2.6	2.9	7.0	7.0	3.2	2.8	2.6	2.6
11.....	2.1	2.4	2.4	2.4	2.6	2.9	7.0	6.9	3.0	2.8	2.6	2.6
12.....	2.1	2.4	2.4	2.4	2.6	3.05	6.8	6.85	3.0	2.8	2.6	2.6
13.....	2.1	2.4	2.4	2.4	2.6	3.25	6.6	6.5	3.0	2.8	2.5	2.6
14.....	2.1	2.4	2.4	2.4	2.6	3.4	6.5	6.4	3.0	2.8	2.5	2.6
15.....	2.1	2.4	2.4	2.4	2.6	3.55	6.4	6.1	3.0	2.8	2.5	2.6
16.....	2.1	2.4	2.4	2.4	2.6	3.7	6.0	5.0	3.0	2.8	2.5	2.6
17.....	2.1	2.4	2.4	2.4	2.6	3.85	5.5	4.85	3.0	2.8	2.5	2.6
18.....	2.1	2.4	2.4	2.4	2.6	4.0	5.0	4.4	3.0	2.8	2.5	2.6
19.....	2.1	2.4	2.4	2.4	2.7	4.5	4.4	4.4	3.0	2.8	2.5	2.6
20.....	2.1	2.4	2.4	2.4	2.7	4.6	4.0	4.25	3.0	2.8	2.4	2.6
21.....	2.1	2.4	2.4	2.4	2.7	4.7	3.9	4.0	3.0	2.8	2.4	2.6
22.....	2.1	2.4	2.4	2.4	2.7	4.8	3.8	3.85	3.0	2.8	2.4	2.6
23.....	2.3	2.4	2.4	2.4	2.7	4.8	4.2	3.8	3.0	2.8	2.4	2.5
24.....	2.3	2.4	2.4	2.4	2.7	4.8	4.55	3.8	3.0	2.8	2.4	2.5
25.....	2.3	2.4	2.4	2.4	2.7	4.8	4.8	3.8	2.9	2.8	2.4	2.5
26.....	2.3	2.4	2.4	2.4	2.8	5.1	5.3	3.7	2.9	2.8	2.4	2.5
27.....	2.3	2.4	2.4	2.4	2.8	5.4	5.55	3.85	2.9	2.8	2.4	2.5
28.....	2.3	2.4	2.4	2.4	2.8	5.5	5.65	3.5	2.9	2.8	2.4	2.5
29.....	2.3	2.4	2.4	2.5	-----	5.5	5.9	3.5	2.9	2.8	2.4	2.5
30.....	2.3	2.4	2.4	2.5	-----	5.6	6.65	3.5	2.9	2.7	2.4	2.5
31.....	2.3	-----	2.4	2.5	-----	5.8	-----	3.5	-----	2.7	2.4	-----

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1893.				1893.				1893.			
1.....	2.6	2.6	2.9	11.....	2.6	2.9	3.6	21.....	2.6	3.0	2.7
2.....	2.6	2.6	2.9	12.....	2.6	3.0	3.4	22.....	2.6	3.0	2.8
3.....	2.6	2.6	3.1	13.....	2.6	3.1	3.3	23.....	2.6	3.0	3.0
4.....	2.6	2.6	3.5	14.....	2.6	3.1	3.2	24.....	2.6	3.0	3.1
5.....	2.6	2.6	3.7	15.....	2.6	3.2	3.0	25.....	2.6	3.2	3.0
6.....	2.6	2.6	4.0	16.....	2.6	3.2	3.0	26.....	2.6	3.1	2.9
7.....	2.6	2.7	4.1	17.....	2.6	3.2	2.9	27.....	2.6	3.1	2.8
8.....	2.6	2.8	4.1	18.....	2.6	3.2	2.9	28.....	2.6	3.0	2.8
9.....	2.6	2.8	4.0	19.....	2.6	3.1	2.8	29.....	2.6	3.0	2.8
10.....	2.6	2.9	3.8	20.....	2.6	3.1	2.8	30.....	2.6	2.9	2.9
								31.....	2.6		2.9

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1.....				1.6	2.2	3.9	2.7	4.9	2.0	1.2	0.9	1.0
2.....				1.6	2.2	2.9	3.3	4.9	1.8	1.2	.9	1.0
3.....				1.6	2.3	2.55	4.1	5.05	1.8	1.2	.9	1.0
4.....				1.7	2.2	2.4	4.4	5.25	1.7	1.2	1.0	1.0
5.....				1.7	2.1	2.3	4.1	5.25	1.7	1.2	1.0	1.0
6.....				1.8	2.1	2.2	3.85	5.2	1.7	1.2	1.0	1.0
7.....				1.8	1.9	2.2	3.8	5.2	1.7	1.1	1.1	1.0
8.....				1.9	1.9	2.1	3.9	5.15	1.6	1.1	1.1	1.1
9.....				1.9	1.9	2.1	3.9	5.05	1.6	1.1	1.1	1.1
10.....				1.9	1.9	2.0	4.0	4.95	1.6	1.1	1.1	1.1
11.....				1.9	1.85	2.0	4.0	4.8	1.6	1.1	1.1	1.1
12.....				2.0	1.8	2.0	4.1	4.7	1.6	1.1	1.1	1.1
13.....				2.45	1.85	1.8	4.2	4.4	1.5	1.1	1.1	1.1
14.....				2.7	1.9	1.8	4.3	4.0	1.5	1.2	1.0	1.1
15.....				2.95	1.9	1.8	4.45	3.85	1.5	1.2	1.0	1.0
16.....				3.0	1.9	2.05	4.65	3.8	1.4	1.2	1.0	1.0
17.....				3.15	2.0	2.25	4.8	3.75	1.4	1.1	1.0	1.0
18.....				3.0	2.05	2.4	4.9	3.65	1.4	1.1	1.0	1.0
19.....				2.25	2.15	2.6	5.05	3.35	1.4	1.1	1.0	1.0
20.....					2.2	2.65	5.2	3.15	1.4	1.1	1.0	1.0
21.....				2.1	2.3	2.7	5.15	3.0	1.4	1.0	1.0	1.0
22.....				2.05	2.3	2.65	5.05	2.75	1.4	1.0	1.0	1.1
23.....				2.0	2.3	2.55	5.0	2.65	1.3	1.0	1.0	1.1
24.....				1.95	2.65	2.4	4.95	2.5	1.3	1.0	1.0	1.1
25.....				1.9	2.85	2.4	4.7	2.4	1.3	1.0	.9	1.1
26.....				1.9	3.15	2.3	4.6	2.4	1.3	1.0	.9	1.1
27.....				1.9	3.65	2.25	4.45	2.3	1.3	1.0	.9	1.1
28.....				2.0	3.8	2.15	4.65	2.3	1.3	.9	.9	1.1
29.....				2.0		2.05	4.7	2.2	1.3	.9	.9	1.2
30.....				2.1		1.9	4.8	2.15	1.2	.9	.9	1.2
31.....				2.1		2.2		2.05		.9	.9	

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.....	1.2	1.2	1.3	1.3	1.6	.....	.....	3.65	5.75	2.25	1.05	1.3
2.....	1.2	1.2	1.3	1.3	1.5	.....	.....	3.6	5.45	2.15	1.0	1.3
3.....	1.2	1.2	1.3	1.3	1.5	.....	.....	3.85	5.0	2.05	1.0	1.3
4.....	1.2	1.2	1.3	1.3	1.4	.....	.....	4.05	4.7	1.95	1.0	1.2
5.....	1.2	1.2	1.3	1.4	1.4	.....	.....	4.35	4.55	1.9	1.0	1.2
6.....	1.2	1.2	1.3	1.4	1.5	.....	.....	4.45	4.45	1.85	1.0	1.1
7.....	1.2	1.2	1.3	1.4	1.5	.....	.....	4.65	4.35	1.8	1.0	1.1
8.....	1.2	1.2	1.3	1.4	1.5	.....	.....	4.8	4.3	1.75	1.0	1.0
9.....	1.1	1.2	1.3	1.4	1.4	.....	.....	4.9	4.25	1.7	.95	1.0
10.....	1.1	1.2	1.3	1.4	1.4	.....	.....	4.8	4.15	1.65	.95	.9
11.....	1.1	1.2	1.3	1.4	1.4	.....	.....	4.8	4.15	1.6	.95	.9
12.....	1.1	1.2	1.3	1.4	1.4	.....	.....	4.7	4.05	1.5	.95	.9
13.....	1.1	1.2	1.3	1.4	1.35	.....	.....	4.65	3.95	1.45	.95	.95
14.....	1.1	1.2	1.3	1.55	1.3	.....	.....	4.6	3.55	1.4	.95	.95
15.....	1.1	1.2	1.3	1.75	1.3	.....	.....	4.55	3.45	1.4	.95	1.0
16.....	1.1	1.2	1.3	2.5	1.3	.....	.....	4.5	3.35	1.35	.9	1.0
17.....	1.1	.....	1.3	5.65	1.3	.....	.....	4.4	3.3	1.3	.9	1.0
18.....	1.1	.....	1.3	3.8	1.3	.....	.....	4.4	3.25	1.25	.9	1.0
19.....	1.1	.....	1.3	3.35	1.3	.....	.....	4.55	3.15	1.2	.9	1.0
20.....	1.2	.....	1.3	3.05	1.4	.....	.....	4.6	3.05	1.2	.9	1.0
21.....	1.2	.....	1.3	2.75	1.4	.....	.....	4.65	2.95	1.2	.9	1.0
22.....	1.2	.....	1.4	2.55	1.4	.....	.....	4.75	2.9	1.1	.9	1.0
23.....	1.2	.....	1.4	2.45	1.5	.....	.....	4.85	2.85	1.1	1.0	.95
24.....	1.2	1.2	1.4	2.4	1.5	.....	.....	5.05	2.8	1.1	1.0	.95
25.....	1.2	1.2	1.4	2.35	1.55	.....	.....	5.25	2.75	1.0	1.1	1.0
26.....	1.2	1.2	1.4	2.05	1.6	.....	3.4	5.45	2.7	1.2	1.1	1.0
27.....	1.2	1.3	1.4	1.85	1.6	.....	3.45	5.65	2.65	1.2	1.2	1.0
28.....	1.2	1.3	1.4	1.8	1.6	.....	3.55	5.85	2.45	1.15	1.2	1.0
29.....	1.2	1.3	1.3	1.75	1.6	.....	3.65	5.95	2.4	1.1	1.3	1.0
30.....	1.2	1.3	1.3	1.7	.....	.....	3.7	6.05	2.35	1.1	1.4	1.0
31.....	1.2	.....	1.3	1.6	.....	.....	.....	6.0	.....	1.1	1.4	.....

Day.	Oct.	Nov.	Apr.	May.	Day.	Oct.	Nov.	Apr.	May.
1896-97.					1896-97.				
1.....	1.1	.....	6.5	16.....	.....	.....	.....	.....
2.....	1.1	.....	6.6	17.....	.....	1.2	.....	.....
3.....	1.1	.....	6.7	18.....	.....	1.2	.....	.....
4.....	6.8	19.....	.....	1.2	.....	.....
5.....	6.7	20.....	.....	1.2	.....	.....
6.....	6.6	21.....	.....	1.2	.....	.....
7.....	6.5	22.....	.....	1.2	.....	.....
8.....	6.3	23.....	.....	1.2	.....	.....
9.....	6.1	24.....	.....	.....	.....	.....
10.....	6.0	25.....	.....	.....	6.9	.....
11.....	5.9	26.....	.....	.....	6.8	.....
12.....	5.7	27.....	.....	.....	6.9	.....
13.....	5.5	28.....	.....	.....	7.1	.....
14.....	5.3	29.....	.....	.....	7.0	.....
15.....	5.1	30.....	.....	.....	6.8	.....
.....	31.....	.....	.....	.....	.....

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1903.			1903.			1903.		
1.....	1.90	11.....	.....	1.93	21.....	.....	2.04
2.....	1.89	12.....	.....	1.94	22.....	.....	2.03
3.....	1.90	13.....	.....	1.95	23.....	.....	2.02
4.....	1.88	14.....	.....	1.96	24.....	.....	2.03
5.....	1.87	15.....	.....	1.97	25.....	.....	2.04
6.....	1.86	16.....	.....	1.98	26.....	.....	2.05
7.....	1.89	17.....	.....	1.99	27.....	.....	2.06
8.....	1.90	18.....	.....	2.05	28.....	1.85	2.05
9.....	1.91	19.....	.....	2.04	29.....	1.86	2.06
10.....	1.92	20.....	.....	2.03	30.....	1.87	2.07
.....	31.....	1.88	.....

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1	2.06	2.38	3.05	3.00	2.69	6.70	7.90	5.20	4.20	2.40	1.90	1.90
2	2.07	2.54	3.00	2.85	2.64	6.20	6.90	5.10	4.25	2.40	1.85	1.95
3	2.08	2.56	2.95	2.90	2.64	6.00	6.50	5.00	4.20	2.40	1.90	1.90
4	2.10	2.58	2.90	3.00	2.65	5.80	6.40	5.05	4.05	2.40	1.85	1.95
5	2.20	2.57	2.88	3.50	2.68	5.60	6.30	5.10	4.00	2.40	1.80	1.90
6	2.25	2.58	2.86	3.10	2.70	5.60	6.40	5.15	3.95	2.40	1.85	1.95
7	2.31	2.59	2.84	2.90	2.72	6.30	6.45	5.10	3.90	2.45	1.80	1.90
8	2.32	2.60	2.80	2.75	2.73	6.20	6.20	5.10	3.85	2.40	1.75	1.95
9	2.31	2.61	2.78	2.55	2.75	7.50	6.00	5.60	3.80	2.35	1.70	2.00
10	2.32	2.60	2.76	2.75	2.78	8.20	5.80	4.95	3.75	2.35	1.75	1.95
11	2.33	2.61	2.80	2.90	2.80	8.10	5.70	4.90	3.70	2.35	1.75	2.00
12	2.32	2.62	2.82	3.00	2.81	7.60	5.60	4.95	3.55	2.35	1.70	1.95
13	2.33	2.64	2.80	3.10	2.80	7.20	6.00	4.90	3.50	2.35	1.75	2.00
14	2.34	2.67	2.78	3.05	2.90	7.00	6.30	5.00	3.45	2.25	1.65	2.00
15	2.33	2.68	2.78	2.90	3.00	6.40	6.40	4.90	3.40	2.20	1.70	2.05
16	2.32	2.69	2.76	2.82	6.50	6.20	6.50	4.80	3.35	2.25	1.65	2.00
17	2.34	2.68	2.75	2.75	6.60	6.00	6.70	4.70	3.30	2.15	1.60	2.05
18	2.32	2.69	2.76	2.85	5.60	6.10	6.60	4.60	3.25	2.20	1.60	2.00
19	2.32	2.68	2.78	2.50	6.00	6.40	6.50	4.70	3.10	2.15	1.65	2.05
20	2.33	2.69	2.77	2.40	5.30	7.30	6.40	4.60	3.75	2.20	1.70	2.10
21	2.34	2.70	2.76	2.50	6.00	8.00	6.50	4.55	3.20	2.15	1.65	2.15
22	2.35	2.71	2.75	2.70	6.50	7.80	6.40	4.50	2.90	2.10	1.70	2.10
23	2.36	2.70	2.76	2.80	6.77	7.40	6.30	4.45	2.80	2.10	1.75	2.05
24	2.37	2.69	2.75	2.85	12.20	6.50	6.20	4.40	2.78	2.05	1.70	2.00
25	2.36	2.70	2.74	2.86	9.60	6.40	6.10	4.35	2.70	2.00	1.75	2.05
26	2.37	2.80	2.73	2.88	9.40	6.00	6.00	4.30	2.65	2.05	1.70	2.10
27	2.38	3.00	2.75	2.92	8.60	5.80	5.90	4.35	2.60	2.00	1.75	2.15
28	2.38	3.20	2.78	2.85	8.10	6.20	5.60	4.30	2.55	2.05	1.70	2.10
29	2.37	3.15	3.00	2.80	7.65	7.50	5.40	4.25	2.50	2.00	1.75	2.05
30	2.36	3.10	2.80	2.75	7.90	5.30	4.20	4.20	2.45	1.95	1.80	2.10
31	2.37	2.95	2.70	2.70	9.00	.....	.....	4.15	.....	2.00	1.75	.....
1904-5.												
1	2.05	2.70	2.70	3.2	3.1	3.75	4.0	4.3	.....	2.45	1.8	1.85
2	2.10	2.65	2.70	3.0	3.15	3.8	4.1	4.25	.....	2.4	1.8	1.85
3	2.05	2.70	2.75	2.9	3.1	3.7	4.0	4.2	.....	2.38	1.8	1.88
4	2.10	2.65	2.70	2.8	3.15	3.65	4.9	4.05	.....	2.35	1.8	1.85
5	2.20	2.70	2.65	2.75	3.1	3.6	3.8	4.05	.....	2.25	1.8	1.85
6	2.15	2.65	2.60	2.8	3.1	3.6	4.1	4.1	3.55	2.25	1.8	1.85
7	2.20	2.60	2.65	3.0	3.05	3.8	4.15	4.05	.....	2.0	1.8	1.85
8	2.30	2.65	3.00	2.9	3.1	3.9	4.0	4.0	.....	2.05	1.8	1.85
9	2.60	2.70	2.90	2.95	3.05	3.95	3.9	4.05	.....	2.05	1.8	1.85
10	2.55	2.65	2.85	2.9	2.6	4.0	3.9	3.9	.....	2.0	1.8	2.0
11	2.60	2.70	2.80	3.0	2.6	3.95	3.85	3.8	.....	1.95	1.8	1.9
12	2.55	2.65	2.75	2.9	3.05	3.9	3.9	3.7	.....	1.95	1.8	1.9
13	2.50	2.70	2.70	3.0	3.2	3.95	4.0	3.7	.....	1.95	1.8	1.9
14	2.55	2.65	2.75	2.9	3.35	4.0	3.9	3.8	3.35	1.95	1.8	1.9
15	2.50	2.70	2.70	3.1	3.2	4.1	3.8	3.85	3.25	1.9	1.8	1.9
16	2.55	2.65	2.70	3.2	3.0	4.0	3.8	3.9	3.2	1.9	1.8	1.9
17	2.50	2.65	2.75	4.9	2.9	4.1	3.8	3.9	3.15	2.15	1.8	2.0
18	2.55	2.70	2.70	4.7	3.2	4.0	3.75	3.85	3.1	1.9	1.82	1.9
19	2.60	2.65	2.75	4.6	3.15	3.2	3.7	3.8	3.05	1.9	1.82	1.9
20	2.70	2.70	2.70	4.0	3.0	3.8	3.7	3.85	3.0	1.85	1.83	1.9
21	2.65	2.65	2.70	3.5	3.2	3.6	3.8	.....	2.96	1.85	1.85	1.9
22	2.70	2.70	2.75	3.3	3.6	3.5	3.95	.....	2.9	1.85	1.9	1.9
23	2.65	2.70	2.70	3.6	3.65	3.6	4.3	.....	2.85	1.85	1.9	1.95
24	2.70	2.65	2.75	5.0	4.9	4.1	4.7	.....	2.70	1.85	1.9	2.0
25	2.65	2.70	2.70	4.2	4.5	3.9	4.0	.....	2.75	1.85	1.9	1.95
26	2.70	2.70	2.65	3.6	3.9	3.7	4.5	.....	2.75	1.84	1.9	1.9
27	2.65	2.70	2.70	3.5	4.0	3.6	4.3	.....	2.6	1.83	1.83	1.95
28	2.70	2.65	2.75	3.45	3.8	3.55	4.3	.....	2.55	1.82	1.85	1.9
29	2.65	2.70	2.70	3.5	.....	3.9	4.35	.....	2.55	1.82	1.85	1.9
30	2.70	2.65	2.75	3.4	.....	4.15	4.4	.....	2.55	2.45	1.85	1.95
31	2.65	.....	3.00	3.3	.....	4.1	.....	.....	.....	1.87	1.85	.....

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	1.9	2.3	2.78	2.97	3.42	3.42	9.00	5.90	7.12	3.97	2.02	2.02
2	2.0	2.3	2.78	2.97	3.37	3.42	8.97	5.87	7.10	3.87	2.04	2.02
3	2.0	2.31	2.7	2.97	3.32	3.42	7.78	5.82	6.52	3.72	2.00	2.02
4	1.9	2.31	2.68	2.97	3.37	3.42	7.24	5.79	6.42	3.62	1.97	2.02
5	2.0	2.31	2.68	2.97	3.37	3.42	7.04	5.77	6.27	3.67	1.92	2.02
6	2.0	2.5	2.58	3.02	3.37	3.42	7.02	5.72	6.02	3.47	1.92	2.02
7	2.0	2.5	2.68	3.02	3.37	3.42	7.14	5.67	5.87	3.32	1.92	2.02
8	1.95	2.5	2.68	3.02	3.37	3.57	8.12	5.57	5.74	3.22	1.92	2.02
9	1.95	2.5	2.68	3.02	3.37	3.90	8.87	5.47	5.52	3.22	1.92	2.02
10	2.0	2.5	2.68	3.02	3.37	4.02	9.00	5.37	5.67	3.42	1.92	2.02
11	2.05	2.5	2.68	3.02	3.27	4.10	8.60	5.27	5.57	2.97	1.92	2.02
12	2.05	2.5	2.68	3.22	3.32	4.12	8.22	5.37	5.47	2.97	1.92	2.02
13	2.03	2.52	2.68	3.22	3.27	4.12	7.72	5.27	5.37	2.92	1.92	2.04
14	2.03	2.52	2.75	3.22	3.22	4.12	7.32	5.22	5.27	2.92	1.92	2.04
15	2.03	2.6	2.78	3.22	3.22	4.12	7.32	5.17	5.07	2.90	1.92	2.02
16	2.05	2.6	2.98	3.22	3.22	4.17	7.42	5.12	4.92	2.87	1.92	2.02
17	2.05	2.61	2.98	3.22	3.17	4.07	7.57	5.07	4.77	2.87	1.92	2.07
18	2.05	2.6	2.98	3.22	2.92	3.87	7.42	5.02	4.57	2.82	1.97	2.14
19	2.05	2.6	2.88	3.60	3.00	3.70	7.32	4.97	4.47	2.82	1.97	2.14
20	2.05	2.6	2.95	3.90	3.07	3.57	7.27	4.92	4.47	2.82	1.97	2.14
21	2.05	2.6	2.65	3.42	3.06	3.47	6.87	4.82	4.39	2.80	1.97	2.14
22	2.1	2.6	2.68	3.42	3.17	3.47	6.82	4.67	4.32	2.72	1.97	2.14
23	2.1	2.6	2.68	3.42	3.32	5.70	6.72	4.57	4.17	2.62	1.97	2.14
24	2.1	2.6	2.78	3.42	3.37	5.44	6.52	4.42	4.11	2.57	1.97	2.14
25	2.12	2.62	2.88	3.47	3.52	6.61	6.62	4.27	4.02	2.47	2.02	2.14
26	2.10	2.62	2.98	3.47	3.42	7.62	6.52	4.22	3.97	2.32	2.02	2.14
27	2.15	2.62	2.98	3.47	3.37	8.04	6.47	4.14	3.92	2.27	2.02	2.37
28	2.15	2.62	3.05	3.47	3.37	7.94	6.42	4.12	3.87	2.22	2.02	2.37
29	2.15	2.62	3.05	3.47	-----	8.02	6.32	4.62	3.90	2.17	2.02	2.37
30	2.3	3.0	3.05	3.47	-----	7.87	6.12	6.62	3.97	2.12	2.02	2.37
31	2.3	-----	3.05	3.47	-----	8.52	-----	7.07	-----	2.07	2.02	-----
1906-7.												
1	2.37	2.32	2.75	2.89	3.70	6.55	6.80	5.65	4.25	4.00	2.50	2.00
2	2.37	2.32	2.75	2.90	3.55	6.25	7.40	5.60	4.20	3.95	2.50	1.95
3	2.37	2.32	2.75	2.95	3.33	6.15	7.10	5.50	4.15	3.85	2.48	1.95
4	2.37	2.32	2.75	2.95	5.33	6.05	7.00	5.40	4.10	3.77	2.45	1.95
5	2.37	2.32	2.75	2.95	7.40	6.00	6.90	5.35	4.00	3.70	2.45	2.00
6	2.37	2.32	2.75	3.00	10.32	6.00	6.80	5.25	3.95	3.60	2.42	2.15
7	2.42	2.34	2.75	3.05	10.90	5.95	6.90	5.15	3.90	3.50	3.42	2.20
8	2.37	2.37	2.75	3.05	9.32	5.88	8.64	5.10	3.85	3.44	2.40	2.20
9	2.37	2.40	2.75	3.07	8.25	6.00	8.25	5.00	4.00	3.40	2.38	2.23
10	2.37	2.42	2.75	3.07	7.52	5.90	7.90	4.92	4.20	3.36	2.35	2.25
11	2.30	2.45	2.75	3.10	7.00	5.70	7.40	4.88	4.30	3.29	2.33	2.30
12	2.30	2.47	2.75	3.08	6.80	5.50	7.25	4.81	4.40	3.25	2.30	2.35
13	2.30	2.52	2.75	3.09	6.30	5.35	7.00	4.78	4.50	3.20	2.25	2.38
14	2.30	2.57	2.75	3.05	6.25	5.15	7.50	4.75	4.40	3.14	2.25	2.40
15	2.30	2.60	2.75	3.00	6.10	5.00	7.40	4.73	4.10	3.12	2.20	2.38
16	2.30	2.64	2.75	2.98	6.00	4.85	7.30	4.70	4.15	3.10	2.15	2.38
17	2.30	2.70	2.75	2.95	6.10	4.85	7.20	4.70	4.25	3.05	2.10	2.35
18	2.30	2.72	2.75	2.93	6.20	5.05	7.10	4.70	4.40	3.00	2.10	2.33
19	2.30	2.72	2.75	2.90	6.30	6.65	7.00	4.70	4.50	2.95	2.10	2.30
20	2.32	2.72	2.75	2.95	6.30	9.15	6.90	4.69	4.50	2.90	2.07	2.30
21	2.32	2.72	2.75	3.00	6.40	9.40	6.79	4.68	4.45	3.30	2.07	2.32
22	2.32	2.72	2.75	2.95	6.20	9.18	6.60	4.65	4.40	3.20	2.07	2.35
23	2.32	2.72	2.75	3.00	6.25	9.42	6.50	4.64	4.30	3.12	2.05	2.40
24	2.32	2.72	2.76	3.05	6.20	9.00	6.45	4.62	4.25	3.00	2.05	2.50
25	2.32	2.72	2.75	3.00	6.20	8.45	6.33	4.60	4.18	2.90	2.05	2.52
26	2.32	2.72	2.75	3.00	6.15	8.00	6.25	4.55	4.10	2.82	2.02	2.55
27	2.32	2.67	2.75	3.00	6.15	7.80	6.10	4.50	4.15	2.79	2.00	2.58
28	2.32	2.67	2.80	3.00	6.00	7.40	6.05	4.45	4.10	2.70	2.00	2.60
29	2.32	2.75	2.85	3.10	-----	7.00	5.95	4.40	4.10	2.65	2.00	2.60
30	2.32	2.75	2.85	3.40	-----	6.85	5.85	4.35	4.05	2.60	2.00	2.58
31	2.32	-----	2.90	3.33	-----	6.80	-----	4.30	-----	2.50	2.02	-----

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	2.58	2.85	2.90	-----	3.25	3.05	3.65	3.3	3.0	3.6	2.15	-----
2.....	2.55	2.85	2.90	3.2	3.25	3.05	3.55	3.3	3.0	3.55	2.15	2.03
3.....	2.55	2.85	2.90	3.2	3.25	3.2	3.45	3.25	3.0	3.5	2.15	2.03
4.....	2.52	2.85	2.90	3.2	3.25	3.4	3.35	3.25	3.0	3.35	2.15	2.03
5.....	2.50	2.88	2.90	3.2	3.25	3.4	3.35	3.25	3.0	3.2	2.15	2.03
6.....	2.50	2.88	2.90	3.25	3.15	3.35	3.35	3.25	4.6	3.1	2.1	2.05
7.....	2.50	2.88	2.90	3.15	3.1	3.35	3.35	3.2	5.6	3.0	2.1	2.05
8.....	2.50	2.90	2.90	3.15	3.1	3.3	3.35	3.2	6.1	2.85	2.1	2.05
9.....	2.50	2.90	2.90	3.15	3.05	3.3	3.35	3.15	5.6	2.71	2.1	2.05
10.....	2.50	2.90	2.90	3.15	3.05	3.3	3.3	3.15	5.3	2.7	2.05	2.1
11.....	2.50	2.92	2.90	3.2	3.05	3.3	3.3	3.1	5.1	2.65	2.05	2.1
12.....	2.50	2.95	2.90	3.15	3.05	3.25	3.3	3.05	5.05	2.65	2.05	2.1
13.....	2.50	2.98	2.90	3.15	3.05	3.25	3.3	3.05	5.05	2.65	2.05	2.1
14.....	2.50	2.98	2.90	3.15	3.05	3.25	3.35	3.05	5.0	2.7	2.03	2.1
15.....	2.50	3.00	2.90	3.15	3.0	3.35	3.4	3.05	4.9	3.6	2.0	2.1
16.....	2.50	3.01	2.90	3.2	3.0	3.5	3.4	3.05	4.85	3.0	2.0	2.1
17.....	2.50	3.00	2.90	3.15	3.0	3.95	3.45	3.05	4.8	2.9	2.0	2.1
18.....	2.50	2.95	2.90	3.15	3.0	6.25	3.5	3.05	4.8	2.6	2.0	2.1
19.....	2.50	2.95	2.90	3.15	3.0	5.65	3.5	3.05	4.7	2.55	2.02	2.15
20.....	2.50	2.90	2.90	3.15	3.0	5.3	3.58	3.1	4.7	2.48	2.03	2.2
21.....	2.50	2.90	2.90	3.2	2.95	5.0	3.55	3.05	4.7	2.4	2.05	2.42
22.....	2.50	2.90	2.90	3.15	2.95	4.6	3.55	3.05	4.6	2.35	2.05	2.42
23.....	2.55	2.90	2.90	3.15	2.95	4.35	3.5	3.05	4.4	2.3	2.05	2.42
24.....	2.55	2.90	2.90	3.15	2.95	4.15	3.4	3.05	4.25	2.25	2.05	2.42
25.....	2.60	2.90	2.95	3.15	3.0	4.05	3.4	3.05	4.1	2.25	2.05	2.42
26.....	2.60	2.90	2.95	3.2	2.95	4.05	3.35	3.0	4.05	2.25	2.03	3.42
27.....	2.55	2.90	3.00	3.15	2.95	3.95	3.35	2.95	4.0	2.25	2.03	2.42
28.....	2.65	2.90	3.00	3.15	2.95	3.9	3.35	3.35	3.9	2.25	-----	2.45
29.....	2.70	2.90	-----	3.15	2.95	3.85	3.35	3.35	3.8	2.2	-----	2.4
30.....	2.75	2.90	-----	3.2	-----	3.8	3.3	3.05	3.65	2.2	-----	2.4
31.....	2.80	-----	-----	3.2	-----	3.7	-----	3.0	-----	2.15	-----	-----
1908-9.												
1.....	2.39	2.7	2.6	3.5	4.75	4.2	6.6	6.05	4.95	3.17	2.22	2.15
2.....	2.38	2.7	2.6	3.45	4.65	4.15	6.55	6.1	4.95	3.12	2.2	2.15
3.....	2.35	2.72	2.6	3.5	4.55	4.2	6.65	6.05	4.9	3.05	2.2	3.61
4.....	2.3	2.73	2.6	3.5	4.5	4.3	6.9	6.0	4.9	3.0	2.2	2.4
5.....	2.3	2.73	2.6	3.5	4.4	4.6	7.0	5.9	4.9	2.95	2.2	2.35
6.....	2.3	2.73	2.6	3.5	4.35	5.28	6.7	5.8	4.85	2.95	2.2	2.3
7.....	2.3	2.75	2.58	3.7	4.25	5.3	6.4	5.7	4.82	2.9	2.2	2.22
8.....	2.3	2.73	2.58	5.55	4.2	5.05	6.0	5.8	4.8	2.9	2.2	2.2
9.....	2.3	2.72	2.58	5.7	4.15	4.95	5.85	5.8	4.78	2.8	2.15	2.18
10.....	2.3	2.7	2.55	5.25	4.0	4.9	5.65	5.75	4.7	2.8	2.15	2.16
11.....	2.3	2.7	2.52	5.0	3.85	4.85	5.98	5.7	4.65	2.75	2.15	2.15
12.....	2.32	2.7	2.52	4.85	4.0	4.8	6.5	5.65	4.6	2.72	2.15	2.15
13.....	2.38	2.7	2.52	4.7	4.0	4.6	6.3	5.6	4.5	2.7	2.15	2.15
14.....	2.4	2.7	2.55	4.7	4.15	4.5	6.3	5.52	4.38	2.68	2.15	2.15
15.....	2.44	2.65	2.57	5.3	4.25	4.4	6.7	5.45	4.3	2.68	2.15	2.15
16.....	2.48	2.65	3.25	7.82	4.4	4.5	7.0	5.35	4.22	2.65	2.15	2.15
17.....	2.5	2.65	3.3	10.0	5.1	5.25	6.9	5.15	4.15	2.62	2.15	2.15
18.....	2.5	2.65	3.4	9.7	4.75	6.68	6.9	5.1	4.1	2.6	2.15	2.15
19.....	2.55	2.65	3.5	8.55	5.2	6.7	6.9	5.0	4.05	2.55	2.15	2.15
20.....	2.55	2.65	3.52	8.9	5.9	6.45	6.85	5.0	4.0	2.55	2.15	2.15
21.....	2.55	2.65	3.52	9.6	5.3	5.95	6.6	5.0	3.95	2.5	2.15	2.15
22.....	2.58	2.65	3.55	8.68	5.0	6.8	6.45	4.95	3.87	2.45	2.15	2.15
23.....	2.6	2.65	3.55	8.25	4.75	6.55	6.35	4.9	3.75	2.4	2.15	2.15
24.....	2.62	2.65	3.58	7.25	4.6	6.4	6.25	5.0	3.67	2.38	2.15	2.15
25.....	2.63	2.65	3.58	6.62	4.4	6.3	6.1	5.1	3.6	2.35	2.15	2.15
26.....	2.63	2.65	3.6	6.3	4.3	6.2	6.0	5.1	3.53	2.3	2.15	2.15
27.....	2.65	2.65	3.6	5.9	4.25	6.0	6.0	5.0	3.5	2.3	2.15	2.15
28.....	2.65	2.65	3.58	5.7	4.2	5.9	5.95	5.0	3.45	2.28	2.15	2.15
29.....	2.68	2.65	3.55	5.5	-----	6.05	5.95	4.9	3.38	2.25	2.15	2.15
30.....	2.7	2.65	3.52	5.35	-----	6.4	6.0	5.0	3.3	2.25	2.15	2.15
31.....	2.7	-----	3.5	5.0	-----	6.6	-----	5.0	-----	2.22	2.15	-----

Daily gage height, in feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2.15	2.5	4.0	3.6	5.0	11.4	7.6	4.9	4.4	2.2	2.2	2.6
2.....	2.2	2.5	3.95	3.6	4.9	12.9	7.4	4.9	4.4	2.2	2.2	2.6
3.....	2.25	2.5	3.9	3.6	4.75	12.1	7.2	4.9	4.35	2.2	2.2	2.0
4.....	2.3	2.5	3.8	3.6	4.7	11.7	6.9	4.85	4.3	2.2	2.2	2.0
5.....	2.3	2.5	3.65	3.6	4.65	10.9	6.4	4.85	4.2	2.2	2.2	2.0
6.....	2.3	2.5	3.6	3.6	4.6	10.4	5.9	4.85	4.2	2.2	2.2	2.0
7.....	2.3	2.5	3.6	3.6	4.6	9.9	6.0	5.5	4.12	2.2	2.2	2.0
8.....	2.35	2.5	3.6	3.6	4.6	9.6	6.0	6.4	4.1	2.2	2.2	2.0
9.....	2.35	2.5	3.6	3.6	4.6	9.1	6.0	6.0	4.1	2.2	2.2	2.0
10.....	2.35	2.5	3.6	3.6	4.6	8.6	6.0	5.5	4.0	2.2	2.2	2.0
11.....	2.38	2.5	3.6	3.6	4.6	8.4	6.0	5.35	3.95	2.2	2.2	2.0
12.....	2.38	2.5	3.6	3.6	4.6	8.0	6.0	5.3	3.85	2.2	2.2	2.0
13.....	2.4	2.5	3.6	3.6	4.6	7.8	5.9	5.25	3.7	2.2	2.2	2.0
14.....	2.4	2.5	3.6	3.6	4.6	7.6	5.8	5.2	3.65	2.2	2.2	2.0
15.....	2.42	2.5	3.6	3.6	6.6	8.7	5.7	5.15	3.6	2.2	2.2	2.0
16.....	2.42	2.5	3.6	3.6	6.05	8.6	5.6	5.1	3.5	2.2	2.2	2.75
17.....	2.45	2.5	3.6	3.6	5.85	9.0	5.55	5.0	3.4	2.2	2.2	2.75
18.....	2.45	2.5	3.6	3.6	5.65	9.0	5.5	4.95	3.25	2.2	2.2	2.75
19.....	2.45	2.5	3.6	3.6	5.4	9.6	5.45	4.85	3.0	2.2	2.2	2.75
20.....	2.45	2.55	3.6	3.6	5.3	10.0	5.35	4.8	2.85	2.2	2.2	2.4
21.....	2.45	2.6	3.6	3.6	5.0	10.3	5.3	4.7	2.7	2.2	2.2	2.4
22.....	2.45	2.6	3.6	3.6	4.8	9.7	5.25	4.65	2.65	2.2	2.2	2.4
23.....	2.45	3.7	3.6	3.6	4.6	8.6	5.25	4.6	2.5	2.2	2.2	2.4
24.....	2.45	4.68	3.6	3.6	4.8	8.5	5.2	4.6	2.4	2.2	2.2	2.4
25.....	2.45	5.1	3.6	3.6	6.3	8.35	5.15	4.6	2.35	2.2	2.2	2.4
26.....	2.45	4.68	3.6	3.6	5.95	8.35	5.15	4.6	2.3	2.2	2.2	2.4
27.....	2.5	4.45	3.6	3.6	5.55	8.3	5.1	4.55	2.3	2.2	2.2	2.4
28.....	2.5	4.35	3.6	6.1	7.4	8.25	5.0	4.5	2.3	2.2	2.2	2.4
29.....	2.5	4.2	3.6	6.1	.....	8.1	4.95	4.5	2.25	2.2	2.2	2.4
30.....	2.5	4.1	3.6	6.0	.....	8.0	4.9	4.5	2.2	2.2	2.2	2.4
31.....	2.5	.....	3.6	5.1	.....	7.9	.....	4.5	.....	2.2	2.6	.....

NOTE.—Water turned into Owyhee canal Mar. 18 and Apr. 7, 1905; water partly turned out of canal Mar. 24, Apr. 26, July 17, July 30, Oct. 30, Nov. 6, 1905, and Dec. 16, 1908. Discharge relation affected by ice Dec. 17, 1908, to Jan. 7, 1909, and Dec. 12, 1909, to Feb. 23, 1910. No record of ice available for earlier years. Rise of March 18, 1908, caused by breaking of dam 150 miles upstream.

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890.												
1							8,220	6,470	2,850	560	200	170
2							6,880	6,740	2,700	560	200	170
3							6,340	7,030	2,560	560	200	170
4							6,080	7,030	2,560	500	200	170
5							6,740	7,030	2,480	500	200	170
6							6,880	7,030	2,260	500	200	170
7							7,190	6,740	2,120	450	170	170
8							7,030	6,470	1,980	450	170	170
9							6,600	6,340	1,840	400	170	170
10							5,840	7,520	1,720	400	170	170
11							5,400	8,580	1,590	400	170	170
12							6,740	11,200	1,460	400	170	170
13							6,600	10,200	1,340	360	170	170
14							6,340	8,050	1,220	360	170	170
15							6,080	6,470	1,160	320	170	170
16							5,720	5,840	1,100	320	170	170
17							5,630	5,190	1,040	300	170	170
18							5,500	4,800	990	280	170	170
19							6,210	4,710	990	280	170	170
20							6,740	4,520	890	280	170	170
21							7,030	4,340	890	280	170	170
22							7,030	4,170	890	280	170	170
23							7,030	4,170	800	240	170	170
24							7,030	4,170	755	240	170	170
25							7,030	4,000	710	240	170	170
26						6,470	6,880	3,820	710	240	170	170
27						5,960	6,740	3,650	620	240	170	170
28						6,470	6,470	3,490	620	240	170	170
29						5,400	6,470	3,330	620	200	200	170
30						5,190	6,470	3,170	620	200	200	170
31						7,350		3,010		200	170	
1890-01.												
1	170	200	280	360	450	4,340	3,400	2,900	2,000	500	240	360
2	170	200	280	360	450	4,160	3,400	2,680	2,080	450	240	360
3	170	200	280	360	450	3,820	3,480	2,600	2,150	450	240	360
4	170	200	280	360	450	2,900	3,660	2,600	2,080	450	240	360
5	170	200	280	360	450	2,900	3,820	2,600	2,000	500	240	360
6	170	200	280	360	450	2,600	4,000	2,450	1,920	665	240	360
7	170	200	320	360	450	2,750	4,080	2,450	1,640	750	240	360
8	170	200	320	360	500	2,900	3,910	2,380	1,440	800	240	360
9	170	200	320	360	500	3,140	3,910	2,300	1,440	700	240	360
10	170	200	320	360	500	3,570	3,660	2,980	1,440	700	240	320
11	170	200	320	320	500	4,340	3,480	3,320	1,320	700	240	320
12	170	200	320	320	500	3,820	3,820	3,660	1,320	630	240	320
13	170	200	320	320	500	3,570	4,160	4,340	1,320	560	240	320
14	170	200	280	320	500	2,820	4,780	4,600	1,200	500	240	320
15	170	200	280	320	630	3,230	6,120	4,600	1,260	450	240	320
16	170	240	280	320	630	3,480	6,460	4,340	1,320	450	240	320
17	170	240	280	320	700	3,740	7,620	4,000	1,320	425	240	320
18	170	240	280	360	700	4,000	9,000	3,910	1,260	380	200	320
19	170	240	280	360	700	3,820	10,000	3,820	1,100	360	200	320
20	170	240	280	360	700	3,570	8,800	3,660	1,150	320	200	280
21	170	240	320	360	700	3,480	7,800	3,480	850	320	200	280
22	170	240	320	360	800	3,230	6,580	3,320	800	320	200	280
23	170	240	320	360	1,050	3,060	6,120	3,140	750	320	200	280
24	170	240	320	360	2,100	2,900	5,460	2,900	630	320	200	280
25	170	240	320	400	2,220	2,900	4,420	2,750	595	320	200	280
26	170	240	320	400	2,600	2,750	4,000	2,750	530	280	200	280
27	170	240	320	400	2,900	2,750	3,740	2,600	500	280	200	280
28	170	240	360	400	3,260	2,600	3,570	2,600	500	260	200	280
29	170	240	360	400		2,980	3,400	2,600	500	240	200	280
30	170	280	360	400		3,230	2,900	2,380	500	240	320	280
31	170		360	400		3,320		2,080		240	320	

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1891-92.												
1.....	280	360	320	320	320	1,150	7,500	15,600	6,230	1,100	700	560
2.....	280	360	320	320	320	900	7,500	15,200	5,770	1,100	700	560
3.....	280	360	320	320	320	800	7,800	16,200	5,460	1,100	630	560
4.....	320	360	320	320	320	630	8,120	16,400	5,150	1,100	630	500
5.....	320	360	320	320	320	630	8,450	16,400	4,600	1,100	630	500
6.....	320	360	320	320	320	950	9,200	16,200	4,420	1,100	630	500
7.....	320	360	320	320	320	1,260	9,600	15,800	4,420	1,100	630	500
8.....	320	400	320	320	320	1,500	10,200	15,600	4,250	1,100	630	500
9.....	320	400	320	320	320	1,700	10,800	15,600	4,080	1,100	630	500
10.....	320	400	320	320	320	1,850	11,600	15,200	4,080	1,000	630	500
11.....	320	400	320	320	320	2,080	12,000	14,800	3,910	1,000	630	500
12.....	320	400	320	320	320	2,680	12,400	14,800	3,740	1,000	630	500
13.....	320	400	320	320	320	3,140	12,800	14,400	3,570	1,000	630	500
14.....	320	400	320	320	475	3,400	13,200	14,000	3,230	1,000	560	500
15.....	320	400	320	320	1,260	3,660	13,400	13,600	3,060	1,000	560	500
16.....	320	400	320	320	1,570	4,000	14,400	13,600	2,750	900	560	500
17.....	320	400	320	320	2,450	4,340	15,600	13,200	2,750	900	560	500
18.....	320	400	320	320	4,160	4,780	16,600	13,000	2,750	900	560	500
19.....	320	400	320	320	3,660	5,460	17,200	12,800	1,440	900	560	500
20.....	320	400	320	320	2,820	6,230	18,000	12,400	1,320	900	560	500
21.....	320	400	320	320	2,080	6,460	18,000	12,400	1,320	900	560	500
22.....	320	360	320	320	2,080	6,230	17,600	12,000	1,320	900	560	500
23.....	320	360	320	320	1,570	6,120	17,600	12,000	1,320	900	560	500
24.....	320	360	320	320	1,920	5,770	17,200	11,600	1,320	800	560	500
25.....	360	360	320	320	1,920	5,770	16,800	11,000	1,200	800	560	500
26.....	360	360	320	320	1,850	5,560	16,800	10,000	1,200	800	560	500
27.....	360	360	320	320	1,640	5,880	16,400	9,200	1,200	800	560	500
28.....	360	360	320	320	1,440	6,230	16,000	8,800	1,200	800	560	500
29.....	360	320	320	320	1,200	6,820	15,600	7,960	1,200	800	560	500
30.....	360	320	320	320	7,220	15,600	7,080	1,200	800	560	500	500
31.....	360	320	320	320	7,500	15,600	6,700	1,200	800	560	500	500
1892-93.												
1.....	500	700	800	800	900	1,200	6,460	9,400	2,150	1,320	1,100	800
2.....	560	700	800	800	900	1,200	6,820	10,000	2,000	1,200	1,100	800
3.....	560	700	800	800	900	1,200	7,220	12,200	2,000	1,200	1,100	800
4.....	560	700	800	800	900	1,200	7,960	13,400	1,780	1,200	1,100	1,000
5.....	560	700	800	800	1,000	1,320	9,000	14,200	1,700	1,200	1,100	1,000
6.....	560	800	800	800	1,000	1,320	9,200	14,800	1,700	1,200	1,000	1,000
7.....	560	800	800	800	1,000	1,320	9,600	14,000	1,700	1,200	1,000	1,000
8.....	560	800	800	800	1,000	1,320	10,200	14,000	1,700	1,200	1,000	1,000
9.....	560	800	800	800	1,000	1,320	10,400	12,200	1,700	1,200	1,000	1,000
10.....	560	800	800	800	1,000	1,320	10,000	10,000	1,700	1,200	1,000	1,000
11.....	560	800	800	800	1,000	1,320	10,000	9,600	1,440	1,200	1,000	1,000
12.....	560	800	800	800	1,000	1,500	9,200	9,400	1,440	1,200	1,000	1,000
13.....	560	800	800	800	1,000	1,780	8,450	8,120	1,440	1,200	900	1,000
14.....	560	800	800	800	1,000	2,000	8,120	7,800	1,440	1,200	900	1,000
15.....	560	800	800	800	1,000	2,220	7,800	6,950	1,440	1,200	900	1,000
16.....	560	800	800	800	1,000	2,450	6,700	4,600	1,440	1,200	900	1,000
17.....	560	800	800	800	1,000	2,680	5,560	4,340	1,440	1,200	900	1,000
18.....	560	800	800	800	1,000	2,900	4,600	3,570	1,440	1,200	900	1,000
19.....	560	800	800	800	1,100	3,740	3,570	3,570	1,440	1,200	900	1,000
20.....	560	800	800	800	1,100	3,910	2,900	3,320	1,440	1,200	800	1,000
21.....	560	800	800	800	1,100	4,080	2,750	2,900	1,440	1,200	800	1,000
22.....	560	800	800	800	1,100	4,250	2,600	2,680	1,440	1,200	800	1,000
23.....	700	800	800	800	1,100	4,250	3,230	2,600	1,440	1,200	800	900
24.....	700	800	800	800	1,100	4,250	3,820	2,600	1,440	1,200	800	900
25.....	700	800	800	800	1,100	4,250	4,250	2,600	1,320	1,200	800	900
26.....	700	800	800	800	1,200	4,780	5,150	2,450	1,320	1,200	800	900
27.....	700	800	800	800	1,200	5,550	5,660	2,680	1,320	1,200	800	900
28.....	700	800	800	800	1,200	5,560	5,880	2,150	1,320	1,200	800	900
29.....	700	800	800	900	.....	5,560	6,460	2,150	1,320	1,200	800	900
30.....	700	800	800	900	.....	5,770	8,620	2,150	1,320	1,100	800	900
31.....	700	800	800	900	.....	6,230	8,620	2,150	1,320	1,100	800	900

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893.												
1	1,000	1,000	1,320									
2	1,000	1,000	1,320									
3	1,000	1,000	1,570									
4	1,000	1,000	2,150									
5	1,000	1,000	2,450									
6	1,000	1,000	2,900									
7	1,000	1,100	3,060									
8	1,000	1,200	3,060									
9	1,000	1,200	2,900									
10	1,000	1,320	2,600									
11	1,000	1,320	2,300									
12	1,000	1,440	2,000									
13	1,000	1,570	1,850									
14	1,000	1,570	1,700									
15	1,000	1,700	1,440									
16	1,000	1,700	1,440									
17	1,000	1,700	1,320									
18	1,000	1,700	1,320									
19	1,000	1,570	1,200									
20	1,000	1,570	1,200									
21	1,000	1,440	1,100									
22	1,000	1,440	1,200									
23	1,000	1,440	1,440									
24	1,000	1,440	1,570									
25	1,000	1,700	1,440									
26	1,000	1,570	1,320									
27	1,000	1,570	1,200									
28	1,000	1,440	1,200									
29	1,000	1,440	1,200									
30	1,000	1,320	1,320									
31	1,000		1,320									
1895.												
1				320	630	2,750	1,100	4,420	500	165	75	100
2				320	630	1,320	1,850	4,420	400	165	75	100
3				320	700	950	3,060	4,690	400	165	75	100
4				360	630	800	3,570	5,060	360	165	100	100
5				360	560	700	3,060	5,060	360	165	100	100
6				400	560	630	1,920	4,960	360	165	100	100
7				400	450	630	2,600	4,960	360	130	130	100
8				450	450	560	2,750	4,870	320	130	130	130
9				450	450	560	2,750	4,690	320	130	130	130
10				450	450	500	2,900	4,510	320	130	130	130
11				450	425	500	2,900	4,250	320	130	130	130
12				500	400	500	3,060	4,080	320	130	130	130
13				850	425	400	3,230	3,570	280	130	130	130
14				1,100	450	400	3,400	2,900	280	165	100	130
15				1,380	450	400	3,660	2,680	280	165	100	100
16				1,440	450	530	4,000	2,600	240	165	100	100
17				1,640	500	665	4,250	2,520	240	130	100	100
18				1,440	530	800	4,420	2,380	240	130	100	100
19				665	595	1,000	4,690	1,920	240	130	100	100
20				612	630	1,050	4,960	1,640	240	130	100	100
21				560	700	1,100	4,870	1,440	240	100	100	100
22				530	700	1,050	4,690	1,150	240	100	100	130
23				500	700	950	4,600	1,050	200	100	100	130
24				475	1,050	800	4,510	900	200	100	100	130
25				450	1,260	800	4,080	800	200	100	75	130
26				450	1,640	700	3,910	800	200	100	75	130
27				450	2,380	665	3,660	700	200	100	75	130
28				500	2,600	595	4,000	700	200	75	75	130
29				500		530	4,080	630	200	75	75	165
30				560		450	4,250	595	165	75	75	165
31				560		630		530		75	75	

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.	165	165	200	200	401	.....	.....	2,380	6,120	760	180	275
2.	165	165	200	200	357	.....	.....	2,300	5,460	694	161	275
3.	165	165	200	200	357	.....	.....	2,680	4,600	632	161	275
4.	165	165	200	200	315	.....	.....	2,980	4,080	576	161	236
5.	165	165	200	240	315	.....	.....	3,480	3,820	548	161	236
6.	165	165	200	240	357	.....	.....	3,660	3,660	522	161	198
7.	165	165	200	240	357	.....	.....	4,000	3,480	496	161	198
8.	165	165	200	240	357	.....	.....	4,250	3,400	472	161	161
9.	130	165	200	240	315	.....	.....	4,420	3,320	447	143	161
10.	130	165	200	240	315	.....	.....	4,250	3,140	424	143	125
11.	130	165	200	240	315	.....	.....	4,250	3,140	401	143	125
12.	130	165	200	240	315	.....	.....	4,080	2,980	357	143	125
13.	130	165	200	240	295	.....	.....	4,000	2,820	336	143	143
14.	130	165	200	300	275	.....	.....	3,910	2,220	315	143	143
15.	130	165	200	380	275	.....	.....	3,820	2,080	315	143	161
16.	130	165	200	900	275	.....	.....	3,740	1,920	295	125	161
17.	130	165	200	5,880	275	.....	.....	3,570	1,850	275	125	161
18.	130	165	200	2,600	275	.....	.....	3,570	1,780	256	125	161
19.	130	165	200	1,920	275	.....	.....	3,820	1,640	236	125	161
20.	165	165	200	1,500	315	.....	.....	3,910	1,500	236	125	161
21.	165	165	200	1,180	315	.....	.....	4,000	1,380	236	125	161
22.	165	165	240	995	315	.....	.....	4,160	1,330	198	125	161
23.	165	165	240	910	357	.....	.....	4,340	1,230	198	161	143
24.	165	165	240	870	357	.....	.....	4,690	1,230	198	161	143
25.	165	165	240	832	379	.....	.....	5,060	1,180	161	198	161
26.	165	165	240	632	401	.....	2,000	5,460	1,130	236	198	161
27.	165	200	240	522	401	.....	2,080	5,880	1,080	236	236	161
28.	165	200	240	496	401	.....	2,220	6,340	910	217	236	161
29.	165	200	200	472	401	.....	2,380	6,580	870	198	275	161
30.	165	200	200	447	.....	.....	2,450	6,820	832	198	315	161
31.	165	.....	200	401	.....	.....	.....	6,700	.....	198	315	.....

Day.	Oct.	Nov.	Apr.	May.	Day.	Oct.	Nov.	Apr.	May.
1896-97.					1896-97.				
1.	198	.....	.....	8,120	16.	.....	.....	.....	.....
2.	198	.....	.....	8,450	17.	.....	236	.....	.....
3.	198	.....	.....	8,800	18.	.....	236	.....	.....
4.	9,200	19.	.....	236	.....	.....
5.	8,800	20.	.....	236	.....	.....
6.	8,450	21.	.....	236	.....	.....
7.	8,120	22.	.....	236	.....	.....
8.	7,500	23.	.....	236	.....	.....
9.	6,950	24.	.....	.....	.....	.....
10.	6,700	25.	.....	.....	9,600	.....
11.	6,460	26.	.....	.....	9,200	.....
12.	6,000	27.	.....	.....	9,600	.....
13.	5,560	28.	.....	.....	10,400	.....
14.	5,150	29.	.....	.....	10,000	.....
15.	4,780	30.	.....	.....	9,200	.....
.....	31.	.....	.....	.....	.....

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1903.			1903.			1903.		
1.	16	11.	.....	20	21.	.....	38
2.	15	12.	.....	22	22.	.....	36
3.	16	13.	.....	23	23.	.....	34
4.	15	14.	.....	24	24.	.....	36
5.	14	15.	.....	25	25.	.....	38
6.	13	16.	.....	27	26.	.....	40
7.	15	17.	.....	28	27.	.....	42
8.	16	18.	.....	40	28.	.....	40
9.	17	19.	.....	38	29.	.....	13
10.	19	20.	.....	36	30.	.....	14
.....	31.	.....	15

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	42	118	408	380	226	5,650	8,630	2,700	1,300	123	16	16
2.....	44	169	380	300	206	4,540	6,120	2,540	1,360	123	12	23
3.....	46	176	352	325	206	4,130	5,190	2,380	1,300	123	16	16
4.....	50	183	325	380	210	3,740	4,970	2,460	1,140	123	12	23
5.....	72	180	315	685	222	3,370	4,750	2,540	1,100	123	9	16
6.....	84	183	205	435	230	3,370	4,970	2,620	1,050	123	12	23
7.....	99	186	295	325	239	4,750	5,080	2,540	1,000	139	9	16
8.....	101	190	275	252	244	4,540	4,540	2,540	955	123	8	23
9.....	99	194	266	172	252	7,580	4,130	2,380	910	110	6	30
10.....	101	190	257	252	266	9,440	3,740	2,300	870	110	8	23
11.....	104	194	275	325	275	9,170	3,550	2,220	830	110	8	30
12.....	101	198	285	380	280	7,840	3,370	2,300	720	110	6	23
13.....	104	206	275	435	275	6,840	4,130	2,220	685	110	8	30
14.....	107	218	266	402	325	6,360	4,750	2,380	652	84	5	30
15.....	104	222	266	325	380	4,970	4,970	2,220	620	72	6	40
16.....	101	226	257	285	5,190	4,540	5,190	2,070	588	84	5	30
17.....	107	222	252	252	5,420	4,130	5,650	1,920	555	61	4	40
18.....	101	226	257	300	3,370	4,330	5,420	1,780	525	72	4	30
19.....	101	222	266	155	4,130	4,970	5,190	1,920	435	61	5	40
20.....	104	226	262	123	2,860	7,080	4,970	1,780	870	72	6	50
21.....	107	230	257	155	4,130	8,900	5,190	1,720	495	61	5	61
22.....	110	234	252	230	5,190	8,360	4,970	1,650	325	50	6	50
23.....	113	230	257	275	5,810	7,330	4,750	1,590	275	50	8	40
24.....	115	226	252	300	20,900	5,190	4,540	1,520	266	40	6	30
25.....	113	230	248	305	13,400	4,970	4,330	1,470	230	30	8	40
26.....	115	275	244	315	12,800	4,130	4,130	1,410	210	40	6	50
27.....	118	380	252	236	10,600	3,740	3,930	1,470	190	30	8	61
28.....	118	495	266	309	9,170	4,540	3,370	1,410	172	40	6	50
29.....	115	465	380	275	7,970	7,580	3,020	1,360	155	30	8	40
30.....	113	435	275	252	.....	8,630	2,860	1,300	139	23	9	50
31.....	115	.....	352	230	.....	11,700	.....	1,250	.....	30	8	.....
1904-5.												
1.....	40	230	230	473	414	868	1,100	1,410	775	118	4	7
2.....	50	210	230	358	444	910	1,200	1,360	760	104	4	7
3.....	40	230	252	304	414	826	1,100	1,300	745	99	4	9
4.....	50	210	230	254	444	787	2,220	1,140	730	92	4	7
5.....	72	230	210	231	414	748	910	1,140	720	69	4	7
6.....	61	210	190	254	414	748	1,200	1,200	710	69	4	7
7.....	72	190	210	358	386	910	1,250	1,140	695	20	4	7
8.....	96	210	380	304	414	1,000	1,100	1,100	680	29	4	7
9.....	190	230	325	331	386	1,050	1,000	1,140	662	29	4	7
10.....	172	210	300	304	168	1,100	1,000	1,000	644	20	4	20
11.....	190	230	275	358	168	1,050	955	910	626	15	4	10
12.....	172	210	252	304	386	1,000	1,000	826	790	15	4	10
13.....	155	230	230	358	473	1,050	1,100	826	586	15	4	10
14.....	172	210	252	304	568	1,100	1,000	910	568	15	4	10
15.....	155	230	230	414	473	1,200	910	955	504	10	4	10
16.....	172	210	230	473	358	1,100	910	1,000	473	10	4	10
17.....	155	210	252	2,220	304	1,200	910	1,000	444	48	4	20
18.....	172	230	230	1,920	473	1,100	868	955	414	10	5	10
19.....	190	210	252	1,780	444	473	826	910	386	10	5	10
20.....	230	230	230	1,100	358	910	826	955	358	7	6	10
21.....	210	210	230	673	473	748	910	940	336	7	7	10
22.....	230	230	252	535	748	673	1,050	925	304	7	10	10
23.....	210	230	230	748	787	748	1,410	910	279	7	10	15
24.....	230	210	252	2,380	2,220	1,200	1,920	895	249	7	10	20
25.....	210	230	230	1,300	1,650	1,000	1,100	880	231	7	10	15
26.....	230	230	210	748	1,000	826	1,650	865	231	7	10	10
27.....	210	230	230	673	1,100	748	1,410	1,050	168	6	7	15
28.....	230	210	252	638	910	710	1,410	1,040	150	5	7	10
29.....	210	230	230	673	.....	1,000	1,470	820	150	5	7	10
30.....	230	210	252	602	.....	1,250	1,520	805	150	118	7	15
31.....	210	.....	380	535	.....	1,200	.....	790	.....	8	7	.....

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	10	80	245	.....	624	624	11,600	3,770	6,460	1,060	27	27
2	20	80	245	.....	589	624	11,500	3,710	6,410	970	29	27
3	20	82	208	.....	554	624	8,190	3,620	5,040	846	25	27
4	10	82	200	.....	589	624	6,760	3,560	4,820	770	22	27
5	20	82	200	.....	589	624	6,260	3,540	4,510	808	17	27
6	20	132	161	.....	589	624	6,210	3,430	4,000	659	17	27
7	20	132	200	.....	589	624	6,510	3,340	3,710	554	17	27
8	15	132	200	.....	589	732	9,120	3,160	3,470	488	17	27
9	15	132	200	.....	589	995	11,200	2,980	3,070	488	17	27
10	20	132	200	.....	589	1,100	11,600	2,810	3,340	624	17	27
11	29	132	200	.....	520	1,170	10,500	2,650	3,160	334	17	27
12	29	132	200	.....	554	1,190	9,300	2,810	2,980	334	17	27
13	25	139	200	.....	520	1,190	8,020	2,650	2,810	306	17	29
14	25	139	231	.....	488	1,190	6,970	2,570	2,650	306	17	29
15	25	168	245	.....	488	1,190	6,970	2,500	2,340	295	17	27
16	29	168	347	.....	488	1,240	7,230	2,420	2,130	280	17	27
17	29	172	347	.....	455	1,140	7,620	2,340	1,920	280	17	32
18	29	168	347	.....	306	970	7,230	2,270	1,670	255	22	41
19	29	168	294	.....	350	830	6,970	2,200	1,560	255	22	41
20	29	168	331	.....	392	732	6,840	2,130	1,560	255	22	41
21	29	168	188	.....	386	659	5,850	1,990	1,470	245	22	41
22	38	168	200	.....	455	659	5,730	1,790	1,390	209	22	41
23	38	168	200	.....	554	3,400	5,500	1,670	1,240	168	22	41
24	38	168	210	.....	589	2,930	5,040	1,500	1,180	150	22	41
25	42	176	210	.....	695	5,240	5,270	1,340	1,100	120	27	41
26	38	176	210	.....	624	7,750	5,040	1,290	1,060	75	27	41
27	48	176	210	.....	589	8,890	4,930	1,210	1,010	64	27	88
28	48	176	210	.....	589	8,620	4,820	1,190	970	54	27	88
29	48	176	210	.....	.....	8,840	4,610	1,730	995	46	27	88
30	80	358	210	.....	.....	8,430	4,200	5,270	1,060	38	27	88
31	80	.....	210	.....	.....	10,200	.....	6,340	.....	32	27	.....
1906-7.												
1	88	75	222	290	830	5,110	5,680	3,300	1,320	1,080	125	25
2	88	75	222	295	718	4,460	7,180	3,210	1,270	1,040	125	20
3	88	75	222	322	561	4,260	6,410	3,030	1,220	952	119	20
4	88	75	222	322	2,750	4,060	6,160	2,860	1,170	886	110	20
5	88	75	222	322	7,180	3,960	5,920	2,780	1,080	830	110	25
6	88	75	222	350	15,500	3,960	5,680	2,620	1,040	755	101	42
7	101	80	232	380	17,200	3,860	5,920	2,460	995	680	101	50
8	88	88	222	380	12,500	3,730	10,660	2,390	952	638	95	50
9	88	95	222	392	9,470	3,960	9,470	2,240	1,080	610	90	56
10	88	101	222	392	7,490	3,770	8,510	2,130	1,270	582	82	60
11	70	110	222	410	6,160	3,390	7,180	2,070	1,370	534	78	70
12	70	116	222	398	5,680	3,030	6,790	1,970	1,480	508	70	82
13	70	132	222	404	4,570	2,780	6,160	1,930	1,590	475	60	90
14	70	150	222	380	4,460	2,460	7,450	1,900	1,480	436	60	95
15	70	160	222	350	4,160	2,240	7,180	1,870	1,170	423	50	90
16	70	176	222	339	3,960	2,030	6,920	1,830	1,220	410	42	90
17	70	200	222	322	4,160	2,030	6,660	1,830	1,320	380	35	82
18	70	209	222	312	4,360	2,320	6,410	1,830	1,480	350	35	78
19	70	209	222	295	4,570	5,340	6,160	1,830	1,590	322	35	70
20	75	209	222	322	4,570	12,000	5,920	1,820	1,590	295	32	70
21	75	209	222	350	4,780	12,700	5,660	1,810	1,540	540	32	75
22	75	209	222	322	4,360	12,100	5,220	1,770	1,480	475	32	82
23	75	209	222	350	4,460	12,800	5,000	1,760	1,370	423	30	95
24	75	209	227	380	4,360	11,600	4,850	1,730	1,320	350	30	125
25	75	209	222	350	4,360	10,000	4,630	1,710	1,250	295	30	132
26	75	209	222	350	4,260	8,780	4,460	1,650	1,170	255	27	142
27	75	188	222	350	4,260	8,240	4,160	1,590	1,220	240	25	153
28	75	188	245	350	3,960	7,180	4,060	1,540	1,170	200	25	160
29	75	222	270	410	.....	6,160	3,860	1,480	1,170	180	25	160
30	75	222	270	610	.....	5,800	3,680	1,420	1,120	160	25	153
31	75	.....	295	561	.....	5,680	.....	1,370	.....	125	27	.....

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-S.												
1	153	270	295	450	508	380	792	540	350	755	42	28
2	142	270	295	475	508	380	718	540	350	718	42	28
3	142	270	295	475	508	475	645	508	350	680	42	28
4	132	270	295	475	508	610	575	508	350	575	42	28
5	125	285	295	475	508	610	575	508	350	475	42	28
6	125	285	295	508	442	575	575	508	1,710	410	35	30
7	125	285	295	442	410	575	575	475	3,210	350	35	30
8	125	295	295	442	410	540	575	475	4,160	270	35	30
9	125	295	295	442	380	540	575	442	3,210	204	35	30
10	125	295	295	442	380	540	540	442	2,700	200	30	35
11	125	306	295	475	380	540	540	410	2,390	180	30	35
12	125	322	295	442	380	508	540	380	2,320	180	30	35
13	125	339	295	442	380	508	540	380	2,320	180	30	35
14	125	339	295	442	380	508	575	380	2,240	200	28	35
15	125	350	295	442	350	575	610	380	2,100	755	25	35
16	125	356	295	475	350	680	610	380	2,030	350	25	35
17	125	350	295	442	350	1,040	645	380	1,960	295	25	35
18	125	322	295	442	350	4,460	680	380	1,960	160	25	35
19	125	322	295	442	350	3,300	680	380	1,830	142	27	42
20	125	295	295	442	350	2,700	740	410	1,830	119	28	50
21	125	295	295	475	322	2,240	718	380	1,830	95	30	101
22	125	295	295	442	322	1,710	718	380	1,710	82	30	101
23	142	295	295	442	322	1,420	680	380	1,480	70	30	101
24	142	295	295	442	322	1,220	610	380	1,320	60	30	101
25	160	295	322	442	350	1,120	610	380	1,170	60	30	101
26	160	295	322	475	322	1,120	575	350	1,120	60	28	101
27	142	295	350	442	322	1,040	575	322	1,080	60	28	101
28	180	295	350	442	322	995	575	575	995	60	28	110
29	200	295	375	442	322	952	575	575	910	50	28	95
30	222	295	400	475	.....	910	540	380	792	50	28	95
31	245	.....	425	475	.....	830	.....	350	.....	42	28	.....
1908-9.												
1	92	200	160	508	1,900	1,220	5,220	4,060	2,170	456	54	42
2	90	200	160	508	1,770	1,220	5,110	4,160	2,170	423	50	42
3	82	209	160	508	1,650	1,270	5,340	4,060	2,100	380	50	702
4	70	214	160	508	1,590	1,370	5,220	3,960	2,100	350	50	95
5	70	214	160	508	1,480	1,710	6,610	3,770	2,100	322	50	82
6	70	214	160	508	1,420	2,670	5,450	3,580	2,030	322	50	70
7	70	222	153	830	1,320	2,700	4,780	3,390	1,990	295	50	54
8	70	214	153	3,120	1,270	2,320	3,960	3,580	1,960	295	50	50
9	70	209	153	3,390	1,220	2,170	3,680	3,580	1,930	245	42	47
10	70	200	142	2,620	1,080	2,100	3,300	3,480	1,830	245	42	44
11	70	200	132	2,240	952	2,030	3,920	3,390	1,770	222	42	42
12	75	200	132	2,030	1,080	1,960	5,000	3,300	1,710	209	42	42
13	90	200	132	1,830	1,080	1,710	4,570	3,210	1,590	200	42	42
14	95	200	142	1,830	1,220	1,590	4,570	3,070	1,460	192	42	42
15	107	180	150	2,700	1,320	1,480	5,450	2,940	1,370	192	42	42
16	119	180	508	8,290	1,480	1,590	6,160	2,780	1,290	180	42	42
17	125	180	508	14,500	2,390	2,600	5,920	2,460	1,220	168	42	42
18	125	180	508	13,600	1,900	5,400	5,920	2,390	1,170	160	42	42
19	142	180	508	10,300	2,540	5,450	5,920	2,240	1,120	142	42	42
20	142	180	508	11,300	3,770	4,890	5,920	2,240	1,080	142	42	42
21	142	180	508	13,300	2,700	3,860	5,220	2,240	1,040	125	42	42
22	153	180	508	10,700	2,240	5,680	4,890	2,170	970	110	42	42
23	160	180	508	9,470	1,900	5,110	4,680	2,100	870	95	42	42
24	168	180	508	6,790	1,710	4,780	4,460	2,240	808	90	42	42
25	172	180	508	5,270	1,480	4,570	4,160	2,390	755	82	42	42
26	172	180	508	4,570	1,370	4,360	3,960	2,390	702	70	42	42
27	180	180	508	3,770	1,320	3,960	3,960	2,240	680	70	42	42
28	180	180	508	3,390	1,270	3,770	3,860	2,240	645	66	42	42
29	192	180	508	3,030	.....	4,060	3,860	2,100	596	60	42	42
30	200	180	508	2,780	.....	4,780	3,960	2,240	540	60	42	42
31	200	.....	508	2,240	.....	5,220	.....	2,240	.....	54	42	.....

Daily discharge, in second-feet, of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	42	125	1,080	410	1,270	18,700	7,700	2,100	1,480	50	50	160
2.....	50	125	1,040	410	1,170	23,200	7,180	2,100	1,480	50	50	160
3.....	60	125	995	410	1,040	20,800	6,660	2,100	1,420	50	50	25
4.....	70	125	910	410	995	19,600	5,920	2,030	1,370	50	50	25
5.....	70	125	792	410	952	17,200	4,780	2,030	1,270	50	50	25
6.....	70	125	755	410	910	15,700	3,770	2,030	1,270	50	50	25
7.....	70	125	755	410	910	14,200	3,960	3,030	1,190	50	50	25
8.....	82	125	755	410	910	13,300	3,960	4,780	1,170	50	50	25
9.....	82	125	755	410	910	11,900	3,960	3,960	1,170	50	50	25
10.....	82	125	755	410	910	10,400	3,960	3,030	1,080	50	50	25
11.....	90	125	755	410	910	9,890	3,960	2,780	1,040	50	50	25
12.....	90	125	.....	410	910	8,780	3,960	2,700	952	50	50	25
13.....	95	125	.....	410	910	8,240	3,770	2,620	830	50	50	25
14.....	95	125	.....	410	910	7,700	3,580	2,540	792	50	50	25
15.....	101	125	.....	410	2,610	10,700	3,390	2,460	755	50	50	25
16.....	101	125	.....	410	2,030	10,400	3,210	2,390	680	50	50	222
17.....	110	125	.....	410	1,840	11,600	3,120	2,240	610	50	50	222
18.....	110	125	.....	410	1,650	11,600	3,030	2,170	508	50	50	222
19.....	110	125	.....	410	1,430	13,300	2,940	2,030	350	50	50	222
20.....	110	142	.....	410	1,350	14,500	2,780	1,960	270	50	50	95
21.....	110	160	.....	410	1,120	15,400	2,700	1,830	200	50	50	95
22.....	110	160	.....	410	980	13,600	2,620	1,770	180	50	50	95
23.....	110	830	.....	410	855	10,400	2,620	1,710	125	50	50	95
24.....	110	1,810	.....	410	980	10,200	2,540	1,710	95	50	50	95
25.....	110	2,390	.....	410	4,570	9,750	2,460	1,710	82	50	50	95
26.....	110	1,810	.....	410	3,860	9,750	2,460	1,710	70	50	50	95
27.....	125	1,540	.....	410	3,120	9,610	2,390	1,650	70	50	50	95
28.....	125	1,420	.....	2,700	7,180	9,470	2,240	1,590	70	50	50	95
29.....	125	1,270	.....	2,700	.....	9,050	2,170	1,590	60	50	50	95
30.....	125	1,170	.....	2,540	.....	8,780	2,100	1,590	50	50	50	95
31.....	125	.....	.....	1,370	.....	8,510	.....	1,590	.....	50	160	.....

NOTE.—Daily discharge determined as follows: 1890 to 1893. From rating curves well defined between 200 and 12,000 second-feet for 1890, but somewhat uncertain for later years on account of lack of measurements. 1895 to 1897. Jan. 1, 1895 to Jan. 17, 1896, from curve fairly well defined above 150 second-feet; Nov. 17-23, 1895, interpolated; Jan. 18, 1896, to May 15, 1897, from fairly well defined curve. 1903 and 1904. From curves well defined between 20 and 15,000 second-feet. 1905 to 1910. 1905, from well-defined curve; 1906, from curve well defined between 500 and 15,000 second-feet and fairly well defined outside these limits for other years; discharge interpolated May 21 to June 5 and June 7-15, 1905, Dec. 29-31, 1907, and Aug. 28 to Sept. 1, 1908, except May 27, 28, and June 12, 1905, on which dates discharge was increased by amount of water turned out of Owyhee canal.

Estimated on account of ice Dec. 24-31, 1905; Dec. 17, 1908, to Jan. 6, 1909, and Dec. 12, 1909, to Feb. 25, 1910; Dec. 12-31, 1909, estimated at 500 second-feet.

Monthly discharge of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-96, and 1903-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1890.					
March 26-31.....	7,350	5,190	6,140	73,100	B.
April.....	8,220	5,400	6,560	390,000	B.
May.....	11,200	3,010	5,910	363,000	B.
June.....	2,850	620	1,400	83,300	B.
July.....	560	200	343	21,100	B.
August.....	200	170	179	11,000	B.
September.....	170	170	170	10,100	B.
The period.....				952,000	
1890-91.					
October.....	170	170	170	10,500	B.
November.....	280	200	221	13,200	B.
December.....	360	280	309	19,000	B.
January.....	400	320	360	22,100	C.
February.....	3,260	450	932	51,800	B.
March.....	4,340	2,600	3,310	204,000	B.
April.....	10,000	2,900	4,980	296,000	B.
May.....	4,600	2,080	3,110	191,000	B.
June.....	2,150	500	1,270	75,600	B.
July.....	800	240	448	27,500	C.
August.....	320	200	232	14,300	C.
September.....	360	280	317	18,900	C.
The year.....	10,000	170	1,300	944,000	
1891-92.					
October.....	360	280	325	20,000	C.
November.....	400	320	376	22,400	C.
December.....	320	320	320	19,700	C.
January.....	320	320	320	19,700	C.
February.....	4,160	320	1,250	71,900	C.
March.....	7,500	630	3,900	240,000	B.
April.....	18,000	7,500	13,500	803,000	B.
May.....	16,400	6,700	13,000	799,000	B.
June.....	6,230	1,200	2,980	177,000	B.
July.....	1,100	700	948	58,300	B.
August.....	700	560	594	36,500	C.
September.....	560	500	506	30,100	C.
The year.....	18,000	280	3,170	2,300,000	
1892-93.					
October.....	700	500	570	35,000	C.
November.....	800	700	783	46,600	C.
December.....	800	800	800	49,200	C.
January.....	900	800	810	49,800	C.
February.....	1,200	900	1,030	57,200	B.
March.....	6,230	1,200	2,940	181,000	B.
April.....	10,400	2,600	6,740	401,000	B.
May.....	14,800	2,150	6,860	422,000	B.
June.....	2,150	1,320	1,540	91,600	B.
July.....	1,320	1,100	1,200	73,800	C.
August.....	1,100	800	916	56,300	D.
September.....	1,000	800	963	57,300	D.
The year.....	14,800	500	2,100	1,520,000	
1893.					
October.....	1,000	1,000	1,000	61,500	D.
November.....	1,700	1,000	1,380	82,100	C.
December.....	3,060	1,200	1,720	106,000	C.
1895.					
January.....	1,640	320	627	38,600	B.
February.....	2,600	400	764	42,400	B.
March.....	2,750	400	771	47,400	B.
April.....	4,960	1,100	3,560	212,000	B.
May.....	5,060	530	2,760	170,000	B.
June.....	500	165	281	16,700	B.
July.....	165	75	126	7,750	C.
August.....	130	75	98.7	6,070	C.
September.....	165	100	118	7,020	C.
The period.....				548,000	

Monthly discharge of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-96, and 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1895-96.					
October.....	165	130	153	9,410	C.
November.....	200	165	170	10,100	B.
December.....	240	200	209	12,900	B.
January.....	5,880	200	781	48,000	C.
February.....	401	275	333	19,200	C.
March.....			^a 716	44,000	D.
April.....			^a 1,740	104,000	D.
May.....	6,820	2,300	4,290	264,000	B.
June.....	6,120	832	2,470	147,000	B.
July.....	760	161	351	21,600	B.
August.....	315	125	170	10,500	B.
September.....	275	125	174	10,400	B.
The year.....	6,820	125	965	701,000	
1903.					
September.....	44	13	27.6	1,640	D.
1903-4.					
October.....	118	42	97.5	6,000	B.
November.....	495	118	338	20,100	B.
December.....	408	205	283	17,400	B.
January.....	685	123	305	18,800	C.
February.....	20,900	206	3,960	228,000	B.
March.....	11,700	3,370	6,010	370,000	B.
April.....	8,630	2,860	4,680	278,000	B.
May.....	2,700	1,250	2,000	123,000	B.
June.....	1,360	139	664	39,500	B.
July.....	139	23	80.0	4,920	B.
August.....	16	4	7.8	482	C.
September.....	61	16	34.1	2,030	C.
The year.....	20,900	4	1,530	^b 1,110,000	
1904-5.					
October.....	230	40	162	9,960	B.
November.....	230	190	219	13,000	B.
December.....	380	190	250	15,400	B.
January.....	2,380	231	707	43,500	C.
February.....	2,200	168	600	33,300	B.
March.....	1,250	473	941	57,900	A.
April.....	2,220	826	1,170	69,800	A.
May.....	1,410	790	1,000	61,500	B.
June.....	790	150	484	28,300	B.
July.....	118	5	31.9	1,960	A.
August.....	10	4	5.7	349	B.
September.....	20	7	10.8	643	B.
The year.....	2,380	4	465	^c 336,000	
1905-6.					
October.....	80	10	31.4	1,930	A.
November.....	358	80	151	8,980	A.
December.....	347	161	228	14,000	B.
January.....			^d 350	21,500	D.
February.....	695	306	533	29,600	A.
March.....	10,200	624	2,700	166,000	A.
April.....	11,600	4,200	7,250	432,000	A.
May.....	6,340	1,190	2,700	166,000	A.
June.....	6,460	970	2,640	157,000	A.
July.....	1,060	32	367	22,600	B.
August.....	29	17	21.5	1,320	B.
September.....	88	27	39.6	2,360	B.
The year.....	11,690	10	1,410	1,020,000	

^a Discharge for Mar. 1 to Apr. 25 estimated from comparison with Bruneau River.

^b Total including Owyhee canal, 1,160,000 acre-feet.

^c Total including Owyhee canal, 392,000 acre-feet.

^d Estimated on account of ice.

Monthly discharge of Owyhee River at Owyhee, Oreg., for 1890-1893, 1895-96, and 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906-7.					
October.....	101	70	78.2	4,810	B.
November.....	222	75	152	9,040	B.
December.....	295	222	228	14,000	B.
January.....	610	290	366	22,500	B.
February.....	17,200	561	5,560	309,000	A.
March.....	12,800	2,030	5,800	357,000	A.
April.....	10,600	3,680	6,130	365,000	A.
May.....	3,300	1,370	2,060	127,000	A.
June.....	1,590	952	1,280	76,200	A.
July.....	1,080	125	498	30,600	A.
August.....	125	25	60.1	3,700	B.
September.....	160	20	82.1	4,890	B.
The year.....	17,200	20	1,830	1,320,000	
1907-8.					
October.....	245	125	142	8,730	B.
November.....	356	270	302	18,000	B.
December.....	425	295	310	19,100	B.
January.....	508	442	455	28,000	B.
February.....	508	322	383	22,000	B.
March.....	4,460	380	1,080	66,400	A.
April.....	792	540	616	36,700	A.
May.....	575	322	428	26,300	A.
June.....	4,160	350	1,670	99,400	A.
July.....	755	42	254	19,600	B.
August.....	42	25	31.3	1,920	B.
September.....	110	28	55.8	3,320	B.
The year.....	4,460	25	477	345,000	
1908-9.					
October.....	200	70	121	7,440	B.
November.....	222	180	193	11,500	B.
December.....	508	152	335	20,600	D.
January.....	14,500	508	4,740	291,000	D.
February.....	3,770	952	1,660	92,200	B.
March.....	5,680	1,220	3,150	194,000	A.
April.....	6,160	3,300	4,840	288,000	A.
May.....	4,160	2,100	2,910	179,000	A.
June.....	2,170	540	1,390	82,700	A.
July.....	456	54	194	11,900	B.
August.....	54	42	44.2	2,720	B.
September.....	762	42	70.9	4,220	B.
The year.....	14,500	42	1,640	1,190,000	
1909-10.					
October.....	125	42	96.0	5,900	B.
November.....	2,390	125	503	29,900	B.
December.....	1,080		^a 624	38,400	D.
January.....	2,700	410	657	40,400	C.
February.....	7,180	855	1,690	93,900	C.
March.....	23,200	7,700	12,500	769,000	B.
April.....	7,700	2,100	3,660	218,000	A.
May.....	4,780	1,590	2,240	138,000	A.
June.....	1,480	50	690	41,100	B.
July.....	50	50	50.0	3,070	B.
August.....	160	50	53.5	3,290	B.
September.....	222	25	85.9	5,110	B.
The year.....	23,200	25	1,900	1,390,000	

^a Dec. 12-31 estimated at 500 second-feet.

OWYHEE CANAL NEAR OWYHEE, OREG.

Location.—In sec. 6, T. 21 S., R. 46 E., just above Wilson's ranch, 2 miles below the intake of the canal, and about 4 miles above the station on Owyhee River.

Records presented.—May 11 to September 27, 1905; occasional measurements in 1903 and 1904.

Wasteways.—There are five wasteways on the canal: The Fletcher (half a mile below the station), Cow Hollow, Locket Gulch, Emerson, and one near Ontario at the end of the ditch. The first two are above the river gaging station.

Accuracy.—Results somewhat uncertain on account of weeds and the operation of wasteways and checks below the gage.

Discharge measurements of Owyhee canal near Owyhee, Oreg., in 1903–1905.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 27	J. H. Lewis.....		120	Mar. 24	E. N. Smith.....	0.78	6.0
Sept. 27	do.....		108	Apr. 14	do.....	2.95	149
1904.				May 12	do.....	3.12	180
June 18	Sawyer and Torkelson.....		154	June 5	do.....	3.17	184
July 1	M. W. Torkelson.....		207	July 17	do.....	3.00	157
13	do.....		178	31	do.....	2.60	123
Aug. 10	Torkelson and Smith.....		142	31	W. C. Sawyer.....	2.60	121
Sept. 2	E. N. Smith.....		156	Aug. 15	E. N. Smith.....	2.53	113
12	do.....		111	Sept. 12	W. C. Sawyer.....	2.65	107
19	do.....		117	Oct. 2	Hawthorne and Griffin.....	2.88	128
Oct. 12	do.....		41.9	13	Sawyer and Hall.....	2.85	134

NOTE.—No gage established during 1903 or 1904.

Daily gage height, in feet, of Owyhee canal near Owyhee, Oreg., for 1905.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1					2.5	16		3.0		2.6	
2		3.4		2.6		17		3.5		3.0	2.6
3			3.4	2.5		18			3.0	3.3	2.6
4				2.5	2.6	19		3.4			2.6
5		3.3		2.5		20				3.0	2.7
6			3.4	2.5	2.65	21			2.8	2.9	
7		3.4	3.4	2.6		22		3.5		2.8	2.6
8			3.4	2.5	2.70	23			2.8		2.7
9		3.5	3.4	2.5		24		3.5			2.6
10				2.5		25			3.4		2.7
11	3.1	3.5		2.6		26	3.5			2.8	2.6
12	3.2	(a)	3.3	2.3	2.65	27	(a)	3.6		2.7	2.7
13	3.3			2.5		28	(a)			2.7	
14		3.1		2.6		29	3.5	3.5		2.65	2.55
15	3.5			2.5		30				(a)	
						31	3.4			2.6	2.5

^a Water turned out.

Daily discharge, in second-feet, of Owyhee canal near Owyhee, Oreg., for 1905.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1		190	190	118	110	16	200	154	160	118	116
2		190	190	118	114	17	200	154	154	118	118
3		187	190	110	116	18	195	154	181	118	120
4		183	190	110	118	19	190	148	168	118	115
5		181	190	110	120	20	195	142	154	118	110
6		185	190	110	122	21	195	136	145	118	110
7		190	190	118	124	22	200	136	136	118	110
8		195	190	110	127	23	200	136	136	118	110
9		200	190	110	122	24	200	163	136	118	110
10		200	187	110	117	25	200	190	136	118	110
11	163	200	184	118	112	26	200	200	136	118	110
12	172	0	181	94	107	27	0	210	127	118	110
13	181	175	176	110	110	28	0	205	127	116	110
14	190	163	171	118	112	29	200	200	122	114	110
15	200	158	165	110	114	30	195	200	0	112	110
						31	190		110	110	

NOTE.—Daily discharge determined from rating curves as follows: Mar. 24 to Sept. 8, fairly well defined; Sept. 12 to 30, fairly well defined.

Monthly discharge of Owyhee canal near Owyhee, Oreg., for 1903-1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
September.....			a 115	6,840	
October.....			a 52	3,200	
1904.					
May.....			a 112	6,890	
June.....			a 163	9,700	
July.....			a 180	11,100	
August.....			a 148	9,100	
September.....			a 127	7,560	
October.....			a 37	2,280	
The period.....				46,600	
1905.					
March.....			b 50	3,070	
April.....			b 120	7,140	
May.....			160	9,840	C.
June.....	200	0	171	10,200	B.
July.....	190	0	158	9,720	B.
August.....	118	94	114	7,010	B.
September.....	127	107	114	6,780	C.
October.....			b 130	7,990	
November.....			b 50	2,980	
The period.....				64,700	

^a Estimated from hydrograph.

^b Estimated; these values are very uncertain, but enable a fairly reliable estimate of the total flow of the river to be made.

*Discharge measurements of wasteways of Owyhee canal in 1905.***Fletcher wasteway near Owyhee, Oreg.**

Date.	Hydrographer.	Discharge.	Date.	Hydrographer.	Discharge.
May 12	E. N. Smith.....	<i>Second-feet.</i> 2.0	Oct. 13	W. C. Sawyer.....	<i>Second-feet.</i> 6.3

Cow Hollow wasteway near Owyhee, Oreg.

May 12	E. N. Smith.....	1.5	Oct. 2	Hawthorne and Griffin.....	5.1
June 6	do.....	2.1			

Locket Gulch wasteway near Arcadia, Oreg.^a

May 11	E. N. Smith.....	1.4	Oct. 3	Hawthorne and Griffin.....	14.6
June 6	do.....	21.3	13	Sawyer and Hall.....	33.4

^a Water discharged at Locket Gulch wasteway Sept. 19 and continuously after Sept. 23.

Emerson wasteway near Arcadia, Oreg.^a

May 11	E. N. Smith.....	6.3	Oct. 3	Hawthorne and Griffin.....	40.7
June 20	do.....	43.7	14	Sawyer and Hall.....	54.1
July 3	do.....	20.3	Nov. 10	R. S. Hall.....	16.6

^a Water discharged at Emerson wasteway Sept. 17-19, 23, and continuously after evening of Sept. 30.

Wasteway near Ontario, Oreg.

Oct. 14	R. S. Hall.....	1.8			
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MALHEUR RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Malheur River rises in the southeastern part of Grant County, flows southward to its junction with South Fork near Riverside and thence northeastward, receiving the North Fork near Juntura, Bully Creek at Vale, and Willow Creek about 4 miles below Vale, and discharges into Snake River at Ontario. Its drainage area, which includes the southeastern slope of the Blue Mountains and the eastern border of the divide that marks the boundary of the Great Basin in Oregon, is fan shaped, the outer border extending 140 miles along the mountain summits. The basin at the mouth of the river measures about 5,620 square miles, and at Riverside below South Fork 1,910 square miles.

Elevations within the basin range from 5,000 feet at the headwaters to 2,000 at the mouth. The country is in general rough and broken and is largely covered with sage brush. Irrigation is restricted to the lower lands immediately adjoining the streams. The headwater areas are lightly forested, but elsewhere the area is timberless and is utilized as range land for cattle and sheep.

The mean annual rainfall ranges from 16 inches on the headwaters to 10 inches at Vale. During the winter months the streams are icebound for part of the time.

This area offers some exceptional advantages for irrigation, for large storage sites, and ample stream flow are conjoined with enormous areas of desert lands. The United States Reclamation Service has had under consideration at different times projects which contemplated the construction of reservoirs on the headwaters of the Malheur and its principal tributaries.

During the period covered by these records, the flow of the Malheur appears to have been greatest in 1904 and lowest in 1895. The earlier records are not so dependable as those of later years.

MALHEUR RIVER ABOVE SOUTH FORK, AT RIVERSIDE, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 22, T. 23 S., R. 37 E., 200 feet above the mouth of South Fork, half a mile above Riverside post office.

Records presented.—January 3, 1906, to March 31, 1907; December 15, 1908, to May 25, 1910.

Drainage area.—1,110 square miles.

Gage.—Vertical staff gage 200 feet above cable since December 15, 1908. Temporary vertical staff 400 feet above cable January 3 to 23, 1906; inclined staff 15 feet below cable January 24 to March 29, 1906, when it was washed out. Temporary gage until May 8, 1906, when chain gage was installed. Location and datum not changed after January 24, 1906.

Channel.—Gravel; somewhat shifting.

Discharge measurements.—Made from cable.

Winter flow.—Somewhat affected by ice.

Diversions.—A large area of bottom land is irrigated with flood water above the station.

Accuracy.—Results fair since 1908, but only approximate for 1906 and 1907 on account of lack of measurements and uncertainties in gage readings.

Discharge measurements of Malheur River above South Fork, at Riverside, Oreg., in 1906, 1909, and 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906. May 9	R. S. Hall.....	<i>Feet.</i> a 2.18	<i>Sec.-ft.</i> 495	1910. Apr. 1 May 25	L. R. Allen.....	<i>Feet.</i> 4.14	<i>Sec.-ft.</i> 811
1909. Feb. 9	R. B. Post.....	2.57	127	.....do.....	.....do.....	2.45	b 115
Mar. 22	.....do.....	3.02	268				
June 27	.....do.....	2.35	63				
Nov. 21	.....do.....	2.30	68				

a At old gage datum.

b Discharge taken as difference of Middle Fork below the forks and South Fork.

Daily gage height, in feet, of Malheur River above South Fork, at Riverside, Oreg., for 1906-1910.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.									
1.....		1.9		6.75	2.2	2.2	1.4	0.6	0.6
2.....		1.9			2.2	2.1	1.4	.6	.6
3.....	1.9	1.6			2.2	2.1	1.4	.6	.6
4.....	1.9	1.6		6.35	2.2	2.2	1.3	.5	.6
5.....	1.9	1.7			2.2	2.3	1.2	.5	.6
6.....	1.9	1.8			2.2	2.2	1.2	.5	.6
7.....	1.9	1.8			2.2	2.2	1.1	.5	.6
8.....	1.9	1.7		6.35	2.1	2.1	1.1	.5	.6
9.....	1.9	1.7		6.35	2.2	2.1	1.1	.5	.6
10.....	1.9	1.8	2.0	6.35	2.2	2.1	1.1	.5	.6
11.....	2.0	1.8	1.9	6.35	2.2	2.1	1.0	.5	.6
12.....	2.1	1.9	1.8		2.1	2.0	1.0	.5	.6
13.....	2.1	1.9	1.7		2.2	2.0	1.0	.5	.6
14.....	2.1	1.8	1.6		2.1	1.9	1.0	.5	.7
15.....	2.1	1.85			2.1	1.9	.9	.5	.8
16.....	2.1	1.9			2.1	1.9	.9	.55	.7
17.....	2.1	1.7			2.0	1.8	1.0	.5	.7
18.....	2.2	1.7			2.0	1.8	1.0	.5	.7
19.....	2.3	1.7			1.9	1.7	.9	.5	.7
20.....	2.3	1.6		3.3	1.8	1.7	.9	.5	.7
21.....	2.4	1.7		3.5	1.8	1.6	.9	.5	.7
22.....	2.0	1.6	1.8	3.4	1.7	1.6	.9	.5	.8
23.....		1.3	2.1	3.4	1.7	1.6	.9	.5	.8
24.....	2.0	1.1	3.75	3.0	1.7	1.5	.9	.5	.8
25.....	2.0	1.1	4.1	2.9	1.7	1.4	.8	.5	.8
26.....	2.0		3.8	2.9	1.6	1.4	.8	.5	.8
27.....	2.1		4.15	2.7	1.8	1.6	.8	.5	.8
28.....	2.1		4.2	2.6	2.1	1.5	.8	.5	.9
29.....	2.0		4.2	2.4	2.5	1.4	.7	.6	.9
30.....	2.0		5.0	2.2	2.8	1.5	.7	.6	.9
31.....	1.9				2.5		.7	.6	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.													
1.....	0.9	0.9	1.2	1.3	3.05	2.4	16.....	0.9	1.1	1.2	1.8	2.2	2.9
2.....	.9	1.1	1.2	1.3	2.1	2.3	17.....	1.0	1.2	1.2	1.8	2.2	3.1
3.....	.9	1.1	1.3	1.3	3.5	2.1	18.....	1.0	1.2	1.2	1.8	2.2	3.65
4.....	.9	1.1	1.2	1.3	7.2	2.1	19.....	1.0	1.2	1.2	1.7	2.1	5.6
5.....	.9	1.1	1.3	1.3	7.7	2.0	20.....	1.0	1.2	1.2	1.6	2.1	4.7
6.....	.9	1.1	1.2	1.3	5.7	2.0	21.....	1.0	1.1	1.2	1.6	2.2	3.8
7.....	.9	1.1	1.2	1.5	3.8	2.3	22.....	1.0	1.1	1.2	1.6	2.2	3.45
8.....	.9	1.1	1.2	1.4	2.95	2.2	23.....	1.0	1.4	1.2	1.5	2.2	3.25
9.....	.9	1.1	1.2	1.4	2.5	2.2	24.....	1.0	1.5	1.2	1.5	2.2	2.95
10.....	1.0	1.1	1.2	1.4	2.6	2.1	25.....	1.0	1.4	1.3	1.7	2.2	2.6
11.....	1.0	1.1	1.2	1.3	2.5	2.0	26.....	1.0	1.4	1.7	1.6	2.95	2.8
12.....	1.0	1.1	1.2	1.3	2.5	2.0	27.....	1.0	1.3	1.8	1.6	2.5	2.5
13.....	1.2	1.1	1.2	1.6	2.3	2.0	28.....	1.0	1.2	1.6	2.4	2.5	2.3
14.....	1.2	1.1	1.1	1.6	2.3	1.95	29.....	1.0	1.2	1.5	1.7	.....	2.4
15.....	.9	1.1	1.2	1.8	2.2	2.8	30.....	1.0	1.2	1.5	2.65	.....	2.3
							31.....	.9	.....	1.3	2.55	.....	2.4

Daily gage height, in feet, of Malheur River above South Fork, at Riverside, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1						2.85	3.6	3.3	2.9	3.8	1.7	1.5
2						3.1	3.7	3.2	2.9	3.8	1.7	1.5
3				3.45		3.2	3.9	3.2	2.8	3.1	1.7	1.5
4				3.15		3.2	3.9	3.2	3.0	3.1	1.8	1.6
5				3.05		3.5	3.5	3.1	3.1	3.1	1.6	1.6
6				3.00		3.2	3.5	3.3	3.0	2.1	1.4	1.6
7				3.25		3.0	3.4	3.3	2.9	2.1	1.4	1.6
8				3.4	2.48	2.9	3.3	3.1	2.9	2.1	1.4	1.7
9				4.35	2.51	2.9	3.4	3.1	2.9	2.1	1.4	1.7
10				3.2	2.4	2.8	3.5	3.1	2.8	2.1	1.4	2.6
11					2.4	2.6	3.6	3.1	2.8	2.1	1.4	2.6
12					2.45	2.6	3.6	3.1	2.7	2.1	1.4	2.6
13					2.7	2.6	3.5	3.1	2.6	2.1	1.4	2.6
14					4.05	2.9	3.8	3.0	2.6	2.1	1.4	2.4
15					3.2	3.2	3.9	2.5	2.6	2.1	1.4	2.4
16			1.4		3.1	3.4	4.0	2.5	2.5	2.0	1.4	2.4
17			1.4	5.88	4.9	3.5	4.1	2.6	2.5	2.0	1.4	2.5
18			1.4	4.9	4.5	3.7	4.1	2.6	2.5	2.0	1.4	2.5
19			1.4	4.7	3.5	3.4	3.9	2.6	2.5	2.0	1.4	2.6
20			1.3	5.7	3.4	3.2	3.8	2.5	2.5	1.9	1.4	2.6
21			1.3	5.35	2.9	3.1	3.8	2.4	2.5	1.9	1.4	2.6
22			1.3	4.7	2.85	3.05	3.6	2.4	2.5	1.9	1.4	2.6
23			1.25	3.45	2.65	3.05	3.5	2.5	2.5	1.9	1.4	2.6
24			1.2	3.1	2.7	3.1	3.5	2.5	2.5	1.9	1.4	2.6
25			1.2		2.8	3.3	3.4	2.6	2.5	1.8	1.4	2.7
26			1.4		2.75	3.2	3.3	2.6	2.35	1.8	1.4	2.7
27			1.6		2.7	3.5	3.3	2.6	2.35	1.8	1.4	2.7
28			1.7		2.8	3.6	3.4	2.6	2.35	1.8	1.4	2.7
29			1.7			3.9	3.5	2.9	2.35	1.8	1.4	2.7
30			1.6			3.8	3.3	2.9	2.35	1.8	1.4	2.8
31			1.6			3.5		2.9		1.7	1.5	
1909-10.												
1	2.8	2.7	2.4	2.3	3.1	9.8	4.2	3.7				
2	2.8	2.6	2.3	2.3	3.0	10.7	4.2	3.7				
3	2.7	2.6	2.3	2.4	3.0		4.3	3.7				
4	2.7	2.5	2.3	2.4	2.9		4.2	3.8				
5	2.7	2.4	2.3	2.4	2.3		4.0	3.7				
6	2.7	2.4	2.3	2.4	2.6		4.2	3.6				
7	2.7	2.4	2.3	2.4	2.8		4.2	3.2				
8	2.7	2.5	2.3	2.4	3.0	9.0	4.3	3.1				
9	2.7	2.5	2.3	2.5	3.0		4.3	3.1				
10	2.7	2.5	2	2.7	3.0		4.4	3.1				
11	2.6	2.6	2.2	2.8	3.5	9.6	4.5	3.1				
12	2.6	2.6	2.4	2.8	3.5		4.4	3.2				
13	2.5	2.6	2.4	2.8	3.4		4.3	3.2				
14	2.5	2.6	2.4	2.8	4.3		4.2	3.0				
15	2.5	2.6	2.4	3.1	3.5		4.0	3.0				
16	2.6	2.5	2.3	3.1	3.5		4.0	2.9				
17	2.5	2.4	2.2	3.0	3.4		3.9	2.9				
18	2.5	2.3	2.2	3.0	3.3		3.8	2.8				
19	2.5	2.3	2.2	2.8	3.4		3.8	2.6				
20	2.5	2.3	2.2	2.8	3.3	5.6	3.8	2.6				
21	2.6	2.3	2.2	3.0	3.3		3.7	2.6				
22	2.6	2.4	2.2	3.0	3.4		3.7	2.5				
23	2.6	2.6	2.2	3.2	3.3		3.8	2.5				
24	2.7	3.1	2.3	3.4	3.4		3.8					
25	2.7	3.0	2.3	3.4	5.4		3.6	2.4				
26	2.7	2.8	2.3	3.5	4.9	4.6	3.7					
27	2.7	2.5	2.4	3.4	5.0	4.5	3.7					
28	2.7	2.5	2.2	3.3	8.8	4.4	3.7					
29	2.7	2.4	2.2	3.4		4.3	3.7					
30	2.8	2.4	2.2	3.3		4.1	3.6					
31	2.7		2.2	3.4		3.9						

NOTE.—Ice present Jan. 1 to Feb. 7, 1907; Dec. 20, 1908, to Jan. 2, 1909; and Dec. 11, 1909, to Feb. 25, 1910. Upper section of the staff gage was taken out Feb. 28, 1910. Observer drove stakes at water's edge and recorded heights several times during following month. Temporary gage set by observer Mar. 26 was read until May 6, when readings were resumed on the lower section of the original gage.

Daily discharge, in second-feet, of Malheur River above South Fork, at Riverside, Oreg., for 1906-7 and 1909-10.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.							
1.....	120	3,480	505	505	200	16	16
2.....	120	3,400	505	460	200	16	16
3.....	120	3,300	505	460	200	16	16
4.....	120	3,200	505	505	170	8	16
5.....	120	3,200	505	550	140	8	16
6.....	200	3,200	505	505	140	8	16
7.....	300	3,200	505	505	110	8	16
8.....	500	3,200	460	460	110	8	16
9.....	460	3,200	505	460	110	8	16
10.....	420	3,200	505	460	110	8	16
11.....	380	3,200	505	460	84	8	16
12.....	340	2,900	460	420	84	8	16
13.....	305	2,600	505	420	84	8	16
14.....	270	2,400	460	380	84	8	28
15.....	250	2,200	460	380	62	8	43
16.....	250	1,900	460	380	62	12	28
17.....	250	1,700	420	340	84	8	28
18.....	250	1,500	420	340	84	8	28
19.....	250	1,300	380	305	62	8	28
20.....	250	1,090	340	305	62	8	28
21.....	300	1,220	340	270	62	8	28
22.....	340	1,160	305	270	62	8	43
23.....	460	1,160	305	270	62	8	43
24.....	1,380	910	305	235	62	8	43
25.....	1,630	855	305	200	43	8	43
26.....	1,420	855	270	200	43	8	43
27.....	1,660	745	340	270	43	8	43
28.....	1,700	695	460	235	43	8	62
29.....	1,700	595	645	200	28	16	62
30.....	2,260	505	800	235	28	16	62
31.....	2,870		645		28	16	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.						1906-7.							
1.....	62	62		80	940	595	16.....	62	110		170	505	855
2.....	62	110		80	460	550	17.....	84	140		170	505	970
3.....	62	110		80	1,220	460	18.....	84	140		170	505	1,320
4.....	62	110		80	3,800	460	19.....	84	140		140	460	2,680
5.....	62	110		80	4,500	420	20.....	84	140		110	460	2,050
6.....	62	110		80	2,750	420	21.....	84	110		110	505	1,420
7.....	62	110		110	1,420	550	22.....	84	110		110	505	1,190
8.....	62	110		90	882	505	23.....	84	200		84	505	1,060
9.....	62	110		90	645	505	24.....	84	235		84	505	882
10.....	84	110		90	695	460	25.....	84	200		140	505	695
11.....	84	110		70	645	420	26.....	84	200		110	882	800
12.....	84	110		70	645	420	27.....	84	170		110	645	645
13.....	140	110		130	550	420	28.....	84	140		420	645	550
14.....	140	110		130	550	400	29.....	84	140		160		595
15.....	62	110		170	505	800	30.....	84	140		500		550
							31.....	62			500		595

Daily discharge, in second-feet, of Malheur River, above South Fork, at Riverside, Oreg., for 1906-7 and 1909-10—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.									
1.....	100	196	215	510	380	230	67	8	3
2.....	200	183	300	560	340	230	60	8	3
3.....	442	170	340	665	340	200	53	8	3
4.....	320	157	340	665	340	265	46	12	5
5.....	282	144	465	465	300	300	39	5	5
6.....	265	131	340	465	380	265	32	2	5
7.....	360	118	265	420	380	230	32	2	5
8.....	420	105	230	380	300	230	32	2	8
9.....	930	113	230	420	300	230	32	2	8
10.....	340	85	200	465	300	200	32	2	140
11.....	320	85	140	510	300	200	32	2	140
12.....	300	98	140	510	300	170	32	2	140
13.....	300	170	140	465	300	140	32	2	140
14.....	300	750	230	610	265	140	32	2	85
15.....	300	340	340	665	110	140	32	2	85
16.....	1,800	300	420	720	110	110	22	2	85
17.....	1,950	1,280	465	780	140	110	22	2	110
18.....	1,280	1,020	560	780	140	110	22	2	110
19.....	1,140	465	420	665	140	110	22	2	140
20.....	1,820	420	340	610	110	110	16	2	140
21.....	1,580	230	300	610	85	110	16	2	140
22.....	1,140	215	282	510	85	110	16	2	140
23.....	442	155	282	465	110	110	16	2	140
24.....	300	170	300	465	110	1.0	16	2	140
25.....	287	200	380	420	140	110	12	2	170
26.....	274	185	340	380	140	74	12	2	170
27.....	261	170	465	380	140	74	12	2	170
28.....	248	200	510	420	140	74	12	2	170
29.....	235	.....	665	465	230	74	12	2	170
30.....	222	.....	610	380	230	74	12	2	200
31.....	209	.....	465	.....	230	.....	8	3	.....
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	
1909-10.									
1.....	200	170	85	38	140	4,770	840	350	
2.....	200	140	63	38	120	5,490	840	350	
3.....	170	140	63	51	120	.....	900	350	
4.....	170	110	63	51	100	.....	840	350	
5.....	170	85	63	51	78	.....	730	320	
6.....	170	85	63	51	80	.....	840	320	
7.....	170	85	63	51	80	.....	840	360	
8.....	170	110	63	51	80	.....	900	320	
9.....	170	110	63	66	100	.....	900	320	
10.....	170	110	45	102	100	.....	960	320	
11.....	140	140	40	120	100	.....	1,020	320	
12.....	140	140	76	120	200	.....	960	360	
13.....	110	140	76	120	300	.....	900	360	
14.....	110	140	76	120	900	.....	840	285	
15.....	110	140	76	180	465	.....	730	285	
16.....	140	110	57	180	465	.....	730	250	
17.....	110	85	40	169	420	.....	680	250	
18.....	110	63	40	169	380	.....	630	215	
19.....	110	63	40	120	420	.....	500	155	
20.....	110	63	40	120	380	.....	400	155	
21.....	140	63	40	169	380	.....	380	155	
22.....	140	85	40	169	420	.....	350	127	
23.....	140	140	40	204	380	.....	420	127	
24.....	170	300	57	300	420	.....	360	114	
25.....	170	265	57	280	850	.....	340	101	
26.....	170	200	57	240	1,280	.....	360	111	
27.....	170	110	76	200	1,340	1,020	400	111	
28.....	170	110	40	200	3,990	960	380	111	
29.....	170	85	40	170	.....	900	360	93	
30.....	200	85	40	140	.....	785	350	84	
31.....	170	.....	40	140	.....	680	.....	86	

NOTE.—Daily discharge determined as follows: 1906 and 1907, from poorly defined rating curve; discharge for January, 1907, estimated on account of ice; Jan. 1, 1908, to Mar. 2, 1910, from curve well defined between 60 and 800 second-feet; Mar. 3 to May 25, 1910, from fairly well defined curve; July 1-5, 1909, estimated from a hydrograph and Dec. 11-31 estimates reduced 10 per cent on account of ice. Estimates for 1910 reduced 40 per cent Jan. 1 to 23 to counteract effect of ice; Jan. 24 to Feb. 13, 1910, estimated by comparison with records below the forks; Feb. 25 interpolated because of probable effect of ice jam. Daily discharge for Mar. 3-25 not published on account of the uncertainty of the gage heights. Discharge Apr. 19 to May 6 estimated from a hydrograph, as comparison with records for the station below the fork indicates that gage heights are doubtful. Discharge May 26 to 31 is the difference between the values determined for the station below the forks and for the South Fork.

Monthly discharge of Malheur River above South Fork, at Riverside, Oreg., for 1906-7 and 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
March	2,870	120	677	41,600	
April	3,480	505	2,070	123,000	
May	800	270	456	28,000	
June	550	200	366	21,800	
July	200	28	88.6	5,450	
August	16	8	9.7	596	
September	62	16	29.7	1,770	
The period				222,000	
1906-7.					
October	140	62	79.1	4,860	
November	235	62	131	7,800	
December			^a 130	7,990	
January	500	70	146	8,980	
February	4,500	460	976	54,200	
March	2,680	400	782	48,100	
The period				132,000	
1909.					
January	1,950	100	592	36,400	C.
February	1,280	85	280	15,600	B.
March	665	140	346	21,300	A.
April	780	380	528	31,400	A.
May	380	85	223	13,700	A.
June	300	74	155	9,220	A.
July	67	8	26.9	1,650	C.
August	12	2	3.0	186	D.
September	200	3	99.0	5,890	C.
The period				122,000	
1909-10.					
October	200	110	154	9,470	B.
November	300	63	122	7,260	B.
December	85	40	55.5	3,410	D.
January	300	38	135	8,300	D.
February	3,990	78	503	27,900	C.
March			2,690	165,000	D.
April	1,020	340	657	39,100	C.
May	360	84	233	14,300	C.
June			36.3	2,160	B.
July			10.6	652	C.
August			4.0	246	C.
September			27.8	1,650	B.
The year	5,490		385	279,000	

^a Estimated on account of ice.

NOTE.—Monthly discharges for 1906-7 are only approximate. Discharge for March, 1910, estimated by comparison with near-by stations. Discharge for June to Sept., 1910, obtained by subtracting the discharge of South Fork of Malheur from the discharge below the mouth of South Fork.

MALHEUR RIVER BELOW SOUTH FORK, AT RIVERSIDE, OREG.

Location.—In sec. 22, T. 23 S., R. 37 E., about half a mile above Riverside post office, at the wagon bridge about 100 yards below the mouth of South Fork.

Records available.—January 16, 1909, to September 30, 1910.

Drainage area.—1,910 square miles.

Gage.—Standard chain; prior to June 12, 1910, staff gages referred to slightly different datums.

Discharge measurements.—Made from highway bridge or by wading.

Channel.—Stones and small boulders. Control may be changed by occasional ice jams.

Winter flow.—River freezes over under bridge in cold weather; flow at riffle control apparently little affected.

Diversions.—Some water is diverted for irrigating ranches along the river; probably only a small proportion of the total flow is used.

Accuracy.—Results fair for ordinary stages; uncertain for extreme high and low water and for periods during which discharge relation is affected by ice.

Discharge measurements of Malheur River below South Fork, at Riverside, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Feb. 9	R. B. Post.....	1.97	168	Apr. 1	L. R. Allen.....	3.40	897
Mar. 22	.....do.....	2.50	360	May 25	.....do.....	1.67	126
Nov. 21	.....do.....	1.47	<i>a</i> 88				

a Sum of discharges of main stream above junction and of South Fork.

Daily gage height, in feet, of Malheur River below South Fork, at Riverside, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....						2.4		2.7		1.5	1.9	1.5
2.....						2.8		2.6		1.4	2.0	1.6
3.....						2.8		2.6		1.5	1.9	1.5
4.....						3.2		2.5		1.4	1.8	1.8
5.....						3.0		2.5		1.5	1.6	1.7
6.....						2.9		2.6		1.4	1.5	1.8
7.....						2.8		2.6		1.5	1.4	1.7
8.....						3.2		2.4		1.4	1.5	1.8
9.....					2.0	2.7		2.5		1.5	1.4	1.7
10.....					2.1	2.5		2.5		1.4	1.5	2.0
11.....					2.5	2.6		2.4		1.4	1.4	1.7
12.....					2.3	2.5		2.4		1.3	1.5	1.8
13.....					2.8	2.5		2.4		1.5	1.4	1.7
14.....					3.7	2.8		2.4		1.2	1.5	1.8
15.....					2.8	2.7		2.5		1.2	1.4	1.7
16.....				4.8	2.8	2.7		2.5		1.1	1.5	2.0
17.....				3.1	4.9	2.8				1.2	1.4	1.6
18.....				2.9	4.0	2.8				1.1	1.5	1.7
19.....				3.0	3.4	2.8	3.1			1.1	1.4	1.7
20.....				3.4	3.0	2.7	3.1			1.0	1.5	1.8
21.....				3.0	2.4	2.5	2.9			1.1	1.4	1.7
22.....				2.6	2.4	2.5	2.8			1.0	1.5	1.8
23.....				2.2	2.6	2.4	2.8	2.4		1.1	1.4	1.7
24.....					2.6	2.6	2.8	2.4		1.0	1.5	1.9
25.....					2.7	2.8	2.8	2.4		2.0	1.4	1.8
26.....					2.5	2.8	2.8	2.4		1.9	1.5	1.9
27.....					2.5	2.8	2.7	2.4	1.5	2.0	1.4	1.8
28.....					2.7	3.1	2.8	2.4	1.4	1.9	1.5	1.9
29.....						3.3	2.8	2.4	1.5	2.0	1.4	1.9
30.....						3.2	2.7	2.4	1.4	1.9	1.5	2.1
31.....						2.9				2.0	1.6	
1909-10.												
1.....	2.0	2.0	1.9	1.7	1.8	9.45	3.4	2.6	1.5	.75	.7	.8
2.....	2.1	1.8	1.8	1.6	1.6	8.3	3.5	2.6	1.4	.8	.65	.8
3.....	1.9	1.8	1.7	1.7	1.7	6.75	3.3	2.6	1.4	.75	.6	.9
4.....	2.0	1.6	1.7	1.6	1.5	5.7	3.4	2.7	1.4	.75	.6	.9
5.....	1.9	1.6	1.7	1.7	1.6	6.0	3.5	2.6	1.35	.75	.55	.9
6.....	2.0	1.5	1.8	1.7	1.5	5.4	3.4	2.5	1.35	.7	.5	.9
7.....	1.9	1.6	1.7	1.8	1.5	5.0	3.6	2.5	1.25	.75	.45	.9
8.....	2.0	1.6	1.8	1.7	1.3	4.8	3.6	2.5	1.2	.75	.4	.9
9.....	1.9	1.7	1.7	1.8	1.5	4.95	3.6	2.5	1.2	.7	.35	.95
10.....	1.9	1.7	1.7	1.9	1.4	4.8	3.7	2.5	1.15	.7	.4	1.0
11.....	1.8	1.6	1.6	2.0	1.7	5.2	3.8	2.5	1.2	.75	.5	1.0
12.....	1.8	1.8	1.9	1.9	2.4	5.1	3.7	2.6	1.15	.75	.6	1.0
13.....	1.7	1.7	1.8	2.2	2.5	4.8	3.6	2.6	1.1	.75	.55	1.0
14.....	1.8	1.8	1.9	2.2	5.8	5.0	3.5	2.4	1.0	.75	.5	1.0
15.....	1.7	1.7	1.8	2.3	2.8	5.0	3.3	2.3	1.0	.75	.5	1.0
16.....	1.8	1.8	1.8	2.3		5.0	3.3	2.2	1.0	.7	.5	1.2
17.....	1.6	1.7	1.6	2.3		4.8	3.2	2.3	.95	.7	.55	1.1
18.....	1.7	1.5	1.7	2.3		4.8	3.1	2.2	.95	.7	.55	1.1
19.....	1.6	1.5	1.6	2.0		4.9	2.9	2.1	.9	.8	.55	1.15
20.....	1.7	1.4	1.6	1.9		5.2	2.8	2.0	.9	.75	.6	1.15
21.....	1.7	1.5	1.5	2.1		6.8	2.7	2.1	.9	.75	.6	1.2
22.....	1.8	2.0	1.6	2.0		5.4	2.7	1.9	.95	.8	.6	1.2
23.....	1.7	2.2	1.5	2.5	5.4	5.6	2.9	1.9	.9	.75	.65	1.15
24.....	1.9	2.6	1.7	4.4	5.8	5.5	2.5		.9	.75	.65	1.15
25.....	1.8	2.4	1.6	2.4	4.2	4.1	2.6	1.7	.85	.75	.7	1.1
26.....	1.9	2.4	1.7	2.4	4.9	4.9	2.6	1.65	.9	.75	.75	1.1
27.....	1.8	2.3	1.7	2.3	4.2	4.2	2.7	1.65	.85	.7	.75	1.1
28.....	1.9	2.3	1.6	3.3	8.1	3.7	2.8	1.65	.8	.7	.75	1.1
29.....	1.8	2.2	1.5	2.3		3.7	2.7	1.55	.8	.7	.7	1.1
30.....	2.0	2.1	1.6	2.0		3.3	2.6	1.5	.75	.7	.7	1.1
31.....	1.9		1.5	1.9		2.8		1.5		.7	.8	

NOTE.—Gage heights for 1909 are somewhat uncertain, as several gages, referred to slightly different datums, were used, and it is not always certain just which gage the observer used. They have been corrected to uniform datum as closely as possible. Readings Jan. 17-23 and May 15-30 are believed to be erroneous.

River probably frozen during a part of January and February, 1909 and 1910; effect somewhat uncertain.

Daily discharge, in second-feet, of Malheur River below South Fork, at Riverside, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	195	195	172	-----	-----	11,700	920	395	93	14	11	17
2.....	220	150	150	-----	-----	9,160	1,000	395	77	17	9	17
3.....	172	150	129	-----	-----	5,870	840	395	77	14	7	24
4.....	195	110	129	-----	-----	3,910	920	440	77	14	7	24
5.....	172	110	129	-----	-----	4,450	1,000	395	70	14	6	24
6.....	195	93	150	-----	-----	3,400	920	355	70	11	5	24
7.....	172	110	129	-----	-----	2,780	1,090	355	57	14	4	24
8.....	195	110	150	-----	-----	2,500	1,090	355	51	14	3	24
9.....	172	129	129	-----	-----	2,710	1,090	355	51	11	2	28
10.....	172	129	129	-----	-----	2,500	1,190	355	46	11	3	32
11.....	150	110	110	-----	-----	3,080	1,290	355	51	14	5	32
12.....	150	150	-----	-----	-----	2,930	1,190	395	46	14	7	32
13.....	129	129	-----	-----	-----	2,500	1,090	395	41	14	6	32
14.....	150	150	-----	-----	-----	2,780	1,000	315	32	14	5	32
15.....	129	129	-----	-----	-----	2,780	840	280	32	14	5	32
16.....	150	150	-----	-----	-----	2,780	840	250	32	11	5	51
17.....	110	129	-----	-----	-----	2,500	760	280	28	11	6	41
18.....	129	93	-----	-----	-----	2,500	690	250	28	11	6	41
19.....	110	93	-----	-----	-----	2,640	550	220	24	17	6	46
20.....	129	77	-----	-----	-----	3,080	490	195	24	14	7	46
21.....	129	93	-----	-----	-----	5,970	440	220	24	14	7	51
22.....	150	195	-----	-----	-----	3,400	440	172	28	17	7	51
23.....	129	250	-----	-----	-----	3,740	550	172	24	14	9	46
24.....	172	395	-----	-----	-----	3,570	355	150	24	14	9	46
25.....	150	315	-----	-----	1,730	1,610	395	129	20	14	11	41
26.....	172	315	-----	-----	2,40	2,640	395	120	24	14	14	41
27.....	150	280	-----	-----	1,730	1,730	440	120	20	11	14	41
28.....	172	280	-----	-----	8,720	1,190	490	120	17	11	14	41
29.....	150	250	-----	-----	-----	1,190	440	102	17	11	11	41
30.....	195	220	-----	-----	-----	840	395	93	14	11	11	41
31.....	172	-----	-----	-----	-----	490	-----	93	-----	11	17	-----

NOTE.—Daily discharge determined from a rating curve well defined between 50 and 1,500 second-feet, Mean discharge estimated because of ice as follows: In 1909, Dec. 12-31, 100 second-feet; 1910, Jan. 1-10, 90 second-feet; Jan. 11-20, 200 second-feet; Jan. 21-31, 300 second-feet; Feb. 1-10, 100 second-feet; Feb. 16-24, 500 second-feet. Discharge not computed for periods prior to Oct. 1, 1909, on account of uncertainty concerning gage heights and rating curve.

Monthly discharge of Malheur River below South Fork, at Riverside, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	220	110	159.	9,780	B.
November.....	395	77	170.	10,100	B.
December.....	172	-----	^a 113.	6,950	C.
January.....	-----	-----	^a 200.	12,300	D.
February.....	8,720	-----	^a 801.	44,500	D.
March.....	11,700	490	3,320.	204,000	C.
April.....	1,290	355	771.	45,900	A.
May.....	440	93	265.	16,300	A.
June.....	93	14	40.6	2,420	B.
July.....	17	11	13.2	812	C.
August.....	17	2	7.7	474	D.
September.....	51	17	35.4	2,110	C.
The year.....	11,700	2	491	356,000	

^a Estimated on account of ice.

MALHEUR RIVER NEAR WESTFALL, OREG.

Location.—In the SE. $\frac{1}{4}$ sec. 26, T. 19 S., R. 42 E., near reservoir dam site, 3 miles below the Harper ranch, 22 miles above Vale, and about 10 miles south of Westfall.

Records available.—December 13, 1903, to October 28, 1905.

Drainage area.—3,820 square miles.

Gage.—Vertical staff until July 27, 1904; inclined staff thereafter. Gage that was installed December 13, 1903, was washed out February 22, 1904, and bears no determined relation to later gages. New vertical staff installed March 8, 1904. Inclined gage set to read same as vertical staff previously used but not at same datum.

Channel.—Gravel and sand; somewhat shifting.

Discharge measurements.—Made from cable or by wading.

Winter flow.—Somewhat affected by ice.

Diversions.—Water is diverted for irrigating small tracts all along the river and its tributaries.

Accuracy.—Results good after March 8, 1904.

Discharge measurements of Malheur River near Westfall, Oreg., in 1903-1905.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1903.		<i>Fect.</i>	<i>Sec. ft.</i>	1905.		<i>Fect.</i>	<i>Sec. ft.</i>
Dec. 13	J. H. Lewis.....	^a 3.45	188	Feb. 6	Smith and Griffin.....	5.78	286
				Mar. 3	Smith and Johnson....	7.09	1,620
1904.				Mar. 4	E. N. Smith.....	7.20	1,680
Mar. 8	J. H. Lewis.....	11.10	8,300	13	do.....	7.72	1,990
9	do.....	11.65	9,150	14	do.....	7.82	2,250
10	do.....	9.50	5,160	28	J. M. Griffin.....	6.70	1,040
April 7	Lewis and Newell.....	8.65	2,960	Apr. 17	do.....	6.40	567
13	H. D. Newell.....	9.70	5,290	May 19	Griffin and Smith.....	5.83	304
May 18	J. M. Griffin.....	7.30	1,720	June 13	E. N. Smith.....	5.89	374
25	do.....	7.30	1,650	19	do.....	5.70	236
June 17	Sawyer and Torkelson.	6.18	446	July 18	Smith and Yates.....	5.13	44
July 21	M. W. Torkelson.....	5.50	145	Sept. 1	E. N. Smith.....	4.94	20
Aug. 25	Sawyer and Smith.....	5.25	44				
Oct. 23	E. N. Smith.....	5.63	147				

^a Referred to temporary gage.

Daily gage height, in feet, of Malheur River near Westfall, Oreg., for 1903-1905.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1				3.4	3.4		7.8	8.9	6.6	5.7	5.4	5.2
2				3.4	3.4		8.0	8.6	6.5	5.7	5.4	5.2
3				3.6	3.4		8.2	8.5	6.5	5.7	5.4	5.2
4				3.4	3.4		8.7	8.3	6.4	5.7	5.35	5.2
5				3.5	3.5		8.8	8.3	6.4	5.7	5.35	5.2
6				3.5	3.5		8.6	8.2	6.3	5.7	5.3	5.3
7				3.6	3.6		8.7	8.0	6.3	5.7	5.3	5.2
8				3.6	3.5	11.01	8.3	7.7	6.3	5.7	5.3	5.2
9				3.6	3.4	11.7	8.3	7.8	6.3	5.7	5.3	5.2
10				3.5	3.5	9.4	8.8	7.8	6.3	5.8	5.25	5.2
11				3.6	3.5	8.6	9.1	7.8	6.3	5.8	5.25	5.2
12				3.9	3.6	8.2	9.5	7.8	6.2	5.8	5.25	5.3
13				3.7	3.5	7.8	9.7	7.6	6.2	6.3	5.25	5.3
14			3.45	3.7	3.7	7.8	10.2	7.5	6.2	5.7	5.3	5.3
15			3.45	3.6	3.6	7.8	10.5	7.5	6.2	5.7	5.3	5.3
16			3.45	3.6	10.0	8.3	10.5	7.4	6.2	5.6	5.3	5.3
17			3.5	3.7	7.9	8.4	10.2	7.4	6.2	5.6	5.25	5.3
18			3.45	3.7	5.9	8.7	10.0	7.3	6.1	5.6	5.25	5.4
19			3.45	3.6	4.8	8.7	9.7	7.3	6.1	5.6	5.25	5.4
20			3.4	3.5	4.6	8.7	10.7	7.3	6.1	5.6	5.25	5.4
21			3.4	3.5	4.5	8.5	10.6	7.3	6.1	5.6	5.25	5.4
22			3.45	3.5	15.4	8.4	10.6	7.1	6.1	5.5	5.25	5.4
23			3.4	3.6		7.3	9.8	7.1	6.0	5.5	5.25	5.4
24			3.3	3.5		7.0	9.8	7.2	6.0	5.5	5.25	5.4
25			3.3	3.5		6.8	9.5	7.3	5.9	5.5	5.25	5.4
26			3.4	3.5		6.7	8.2	7.2	5.8	5.5	5.25	5.55
27			3.3	3.5		6.7	9.7	7.1	5.8	5.5	5.3	5.55
28			3.3	3.4		6.7	9.2	7.0	5.8	5.5	5.3	5.5
29			3.3	3.4		9.1	9.4	6.9	5.8	5.5	5.25	5.5
30			3.3	3.5		9.0	9.0	6.8	5.7	5.4	5.25	5.5
31			3.3	3.4		8.3		6.7		5.4	5.2	
1904-5.												
1	5.5	5.6					6.5	6.2	5.9			
2	5.5	5.6					6.5	6.2		5.5		4.9
3	5.5	5.6				7.1	6.7	6.2				
4	5.5	5.6				7.2	6.9	6.1				
5	5.5	5.6				7.0	7.0	6.1	5.8		4.9	
6	5.5	5.6				7.0	6.7	6.1				
7	5.5	5.6				7.1	6.6	6.0		5.4		
8	5.55	5.6				7.0	6.6	6.0				
9	5.55	5.6				6.8	6.7	6.0	5.8			5.0
10	5.62	5.6				6.9	6.7	6.0				
11	5.6	5.6				7.1	6.7	6.0		5.3		
12	5.6	5.6				7.4	6.7	6.0			4.6	
13	5.6	5.6				7.7	6.6	6.0	5.9			
14	5.62	5.6				7.8	6.5	5.9		5.2		
15	5.62	5.6				7.4	6.5	5.8				
16	5.6	5.6				7.2	6.5	5.8	5.8			5.1
17	5.6	5.6				7.1	6.4	5.7				
18	5.62	5.7				6.9	6.4	5.7		5.1		
19	5.6	5.7				6.9	6.4	5.6	5.6		4.3	
20	5.6	5.7				7.0	6.4					
21	5.6					7.4	6.4			5.0		
22	5.6					7.2	6.4	5.6			4.95	
23	5.6					6.9	6.3		5.6			5.2
24	5.6			9.0		6.9	6.3					
25	5.6			7.3		6.9	6.3					
26	5.6			7.0		6.7	6.3	5.7	5.5		4.9	
27	5.6			6.5		6.7	6.3					
28	5.6					6.7	6.3			4.9		
29	5.6					6.6	6.3					
30	5.6					6.6	6.2	6.7	5.5			5.2
31	5.6					6.5				4.9		

NOTE.—Gage readings December, 1903, to Feb. 21, 1904, refer to temporary gage. Gage height for Feb. 22 obtained by leveling to high-water mark and refers to datum of gage established Mar. 8. This peak may have occurred either Feb. 22 or 25 and was probably closely approached in both floods. Additional gage readings in 1905 are as follows: Oct. 7, 5.3 feet; Oct. 14, 5.4 feet; Oct. 21, 5.5 feet; Oct. 28, 5.6 feet.

Daily discharge, in second-feet, of Malheur River near Westfall, Ore., for 1903-1905.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1				167	167	2,000	1,960	3,690	727	230	104	34
2				167	167	1,900	2,220	3,160	650	230	104	34
3				252	167	1,600	2,510	2,960	650	230	104	34
4				167	167	1,300	3,330	2,670	581	230	84	34
5				209	209	2,000	3,510	2,670	581	230	84	34
6				209	209	2,600	3,160	2,510	519	230	64	64
7				252	252	4,000	3,330	2,220	519	230	64	34
8				252	209	7,940	2,670	1,840	519	230	64	34
9				252	167	9,350	2,670	1,960	519	230	64	34
10				209	209	4,660	3,510	1,960	519	274	44	34
11				252	209	3,160	4,070	1,960	519	274	44	34
12				386	252	2,510	4,860	1,960	463	274	44	64
13				296	209	1,960	5,270	1,720	463	519	44	64
14			190	296	296	1,960	6,290	1,600	463	230	64	64
15			190	252	252	1,960	6,900	1,600	463	230	64	64
16			190	209	10,300	2,670	6,900	1,490	463	188	64	64
17			210	296	5,980	2,830	6,290	1,490	463	188	44	64
18			190	296	2,290	3,330	5,880	1,380	411	188	44	104
19			190	252	1,030	3,330	5,270	1,380	411	188	44	104
20			170	209	850	3,330	7,310	1,380	411	188	44	104
21			170	209	767	2,990	7,100	1,380	411	188	44	104
22			190	209	8,900	2,830	7,100	1,170	411	146	44	104
23			170	252	3,700	1,380	5,470	1,170	362	146	44	104
24			130	209	4,200	1,080	5,470	1,270	362	146	44	104
25			130	209	10,000	893	4,860	1,380	318	146	44	104
26			170	209	5,300	808	2,510	1,270	274	146	44	167
27			130	209	3,600	808	5,270	1,170	274	146	64	167
28			130	167	2,600	808	4,260	1,080	274	146	64	146
29			130	167	1,900	4,070	4,660	982	274	146	44	146
30			130	209		3,880	3,880	893	230	104	44	146
31			130	167		2,670		808		104	34	
1904-5.												
1	146	188	252				840	580	360			
2	146	188	230				840	580		146		19
3	146	188	209			1,460	1,040	580				
4	146	188	146			1,570	1,240	503				
5	146	188	209			1,350	1,350	503	297		19	
6	146	188	146			1,350	1,040	503				
7	146	188	188			1,460	936	430		110		
8	167	188	209			1,350	936	430				
9	167	188	209			1,140	1,040	430	297			25
10	196	188	209			1,240	1,040	430				
11	188	188	209			1,460	1,040	430		82		
12	188	188	252			1,800	1,040	430			8	
13	188	188	252			2,160	936	430	360			
14	196	188	274			2,300	840	360		59		
15	196	188	252			1,800	840	297				
16	188	188	167			1,570	840	297	297			40
17	188	188	252			1,460	747	239				
18	196	230	274			1,240	747	239		40		
19	188	230	274			1,240	747	189	189		3	
20	188	230	274			1,350	747	189				
21	188	230	252			1,800	747	189		25		
22	188	230	188			1,570	747	189			21	
23	188	209	209			1,240	661	189	189			59
24	188	274	252	4,200		1,240	661	239				
25	188	274	188	1,680		1,240	661	239				
26	188	274	209	1,350		1,040	661	239	146		19	
27	188	274	209	840		1,040	661	430				
28	188	274	274			1,040	661	580		19		
29	188	274	209			936	661	747				
30	188	274	209			936	580	1,040	146			59
31	188		437			840		661		19		

NOTE.—Daily discharges for October, 1905, as follows: Oct. 7, 82 second-feet; Oct. 14, 110 second-feet; Oct. 21, 146 second-feet; Oct. 28, 189 second-feet.

Daily discharge determined as follows: Dec. 14, 1903, to Feb. 21, 1904, from rating curve fairly well defined below 2,000 second-feet; Mar. 8 to Dec. 31, 1904, from curve fairly well defined between 50 and 10,000 second-feet; 1905, from curve fairly well defined above 20 second-feet; Feb. 22 to Mar. 7, 1904, by deducting discharge of Bully Creek from that of Malheur River at Vale.

Monthly discharge of Malheur River near Westfall, Oreg., for 1903-1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
December 14-31.....	210	130	163	5,820	B.
January.....	386	167	229	14,100	C
February.....	10,300	167	2,230	128,000	C.
March.....	9,350	808	2,790	172,000	B.
April.....	7,310	1,960	4,620	275,000	B.
May.....	3,690	808	1,750	108,000	B.
June.....	727	230	450	26,800	B.
July.....	519	104	206	12,700	B.
August.....	104	34	58	3,570	B.
September.....	167	34	80	4,760	B.
The period.....				751,000	
1904-5.					
October.....	196	146	178	10,900	B.
November 1-20.....	230	188	194	7,700	B.
March 3-31.....	2,300	840	1,390	79,700	B.
April.....	1,350	580	850	50,600	B.
May.....	1,040	189	413	25,400	B.
June.....			253	15,100	B.
July.....			62.5	3,840	B.
August.....			14.0	861	C.
September.....			40.4	2,400	B.
October.....			132	8,120	B.

NOTE.—Monthly means June to October, 1905, are the means of discharges for days on which gage was read.

MALHEUR RIVER AT M'LAUGHLIN BRIDGE, NEAR VALE, OREG.

Location.—At McLaughlin bridge, 10 miles above Vale, near southeast corner of sec. 6, T. 19 S., R. 44 E.

Records available.—December 10, 1904, to December 20, 1906.

Drainage area.—4,150 square miles.

Gage.—Chain.

Channel.—Sand and gravel; somewhat shifting.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Affected by ice.

Diversions.—Vine's, Malheur farmers', McLaughlin, "J. H.," and Linebarger ditches divert water the mouth of canyon below the Harper ranch station and McLaughlin bridge.

Accuracy.—Results for 1905 good; those for 1906 uncertain on account of lack of measurements and have been discarded.

Discharge measurements of Malheur River at McLaughlin bridge, near Vale, Oreg., in 1905-6.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 28	Smith and Johnson.....	3.80	730	July 18	Yates and Smith.....	2.30	36
Feb. 27	do.....	4.70	1,510	28	Smith and Sawyer.....	2.21	34
Mar. 2	Griffin and Johnson.....	4.50	1,320	Aug. 4	E. N. Smith.....	2.18	16
12	E. N. Smith.....	5.00	1,750	12	do.....	2.12	10
14	do.....	5.41	2,130	Sept. 2	do.....	2.12	14
Apr. 1	Smith and Griffin.....	4.00	970	Oct. 12	Sawyer and Hall.....	2.38	64
17	J. M. Griffin.....	3.90	890	Nov. 6	R. S. Hall.....	2.58	120
30	do.....	3.60	478				
May 6	do.....	3.35	434	1906.			
16	do.....	3.00	294	Mar. 3	R. S. Hall.....	3.18	328
June 14	E. N. Smith.....	3.10	342	Apr. 26	do.....	5.11	2,680
28	do.....	2.60	112	Nov. 28 ^a	Stevens and McGlashan	1.71	107

^a Channel frozen over above and below bridge.

Daily gage height, in feet, of Malheur River at McLaughlin bridge, near Vale, Oreg., for 1905-6.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.					3.20	4.50	4.00	3.45	2.93	2.60	2.20	2.12
2.					3.10	4.56	4.07	3.50	2.95	2.50	2.18	2.12
3.					3.10	4.59	4.45	3.50	2.90	2.50	2.20	2.15
4.					3.05	4.66	4.60	3.45	3.00	2.48	2.18	2.15
5.					3.00	4.65	4.27	3.40	3.10	2.45	2.15	2.15
6.				2.97	3.00	4.62	4.10	3.30	3.10	2.43	2.15	2.15
7.					2.90	4.80	7.10	3.20	3.25	2.40	2.15	2.18
8.					2.90	4.70	4.15	3.10	3.70	2.40	2.12	2.18
9.					2.90	4.55	4.27	3.05	3.30	2.40	2.15	2.20
10.					2.90	4.65	4.25	3.05	3.40	2.33	2.15	2.22
11.						3.25	4.70	4.25	3.00	3.30	2.25	2.13
12.							5.00	4.15	3.07	3.27	2.20	2.15
13.						3.50	5.42	4.00	3.00	3.05	2.25	2.15
14.				3.15			5.45	4.00	2.90	3.07	2.25	2.10
15.							5.20	4.00	2.90	3.00	2.35	2.15
16.							4.80	3.92	2.85	2.95	2.35	2.10
17.							4.60	3.85	2.82	2.90	2.35	2.10
18.					3.05		4.52	3.85	2.80	2.85	2.33	2.10
19.							4.50	3.80	2.75	2.85	2.30	2.12
20.							4.50	3.80	2.73	2.83	2.27	2.12
21.				4.85			5.00	3.87		2.75	2.25	2.12
22.					4.88		4.85	3.80	2.70	2.70	2.23	2.14
23.				5.50	4.22		4.50	3.75	2.70	2.67	2.20	2.13
24.				6.60	5.18		4.50	3.75	2.70	2.65	2.20	2.13
25.				5.00	5.35		4.40	3.70	2.70	2.65	2.20	2.14
26.				4.45	5.30		4.20	3.70	2.90	2.60	2.20	2.14
27.				4.05	4.85		4.15	3.75	2.75	2.60	2.25	2.14
28.				3.80	4.65		4.25	3.75	3.30	2.60	2.20	2.15
29.				3.60			4.10	3.72	2.95	2.60	2.20	2.12
30.				3.50			4.05	3.60	2.98	2.60	2.19	2.12
31.				3.30			4.00		3.00		2.18	2.12
1905-6.												
1.	2.40	2.60	3.00		3.62	3.55	10.06	4.25	4.00	2.40	1.35	1.25
2.	2.40	2.60	2.90		3.62	3.25	8.28	4.15	3.62	2.30	1.35	1.30
3.	2.40	2.60	2.80		3.62	3.20	7.85	4.10	3.65	2.30	1.30	1.30
4.	2.40	2.60	2.80		3.62	3.15	7.25	4.05	3.60	2.25	1.25	1.40
5.	2.40	2.60	2.75		3.62	3.20	7.80	4.00	3.60	2.25	1.20	1.35
6.	2.40	2.60	2.65		3.62	3.20	7.40	3.95	3.75	2.25	1.20	1.40
7.	2.40	2.60	2.65		3.62	3.30	7.70	3.95	3.70	2.15	1.15	1.40
8.	2.40	2.60	2.70		3.62	3.80	7.92	3.85	3.60	2.15	1.15	1.45
9.	2.40	2.60	2.70		3.62	3.90	8.08	3.75	3.58	2.15	1.15	1.45
10.	2.40	2.60	2.70		3.62	4.20	7.98	3.65	3.55	1.90	1.15	1.45
11.	2.40	2.60	2.75		3.70	4.10	7.40	3.60	3.55	1.90	1.00	1.45
12.	2.40	2.60	2.90		3.70	3.63	6.85	3.60	3.30	1.90	1.00	1.50
13.	2.38	2.60	2.95		3.70	3.50	6.10	3.65	3.30	1.80	1.00	1.50
14.	2.40	2.60			3.70	3.35	5.90	3.60	3.25	1.75	1.00	1.55
15.	2.45	2.60			3.70	3.25	5.95	3.55	3.20	1.75	1.00	1.55
16.	2.48	2.60			3.70	3.25	6.00	3.52	3.20	1.65	1.00	1.55
17.	2.50	2.60			3.70	3.20	6.15	3.50	3.15	1.65	1.00	1.60
18.	2.52	2.60			3.70	3.15	6.15	3.45	3.00	1.60	1.00	1.60
19.	2.52	2.65			3.75	3.15	5.80	3.30	2.90	1.55	1.05	1.60
20.	2.55	2.62			4.24	3.15	5.38	3.15	2.85	1.52	1.05	1.65
21.	2.57	2.62			4.66	3.15	5.44	3.00	2.80	1.52	1.10	1.65
22.	2.57	2.62			4.80	3.25	5.44	3.00	2.75	1.42	1.10	1.62
23.	2.57	2.62			5.32	3.85	5.38	2.90	2.50	1.50	1.15	1.60
24.	2.58	2.60			4.82	5.15	5.30	2.90	2.50	1.42	1.15	1.60
25.	2.60	2.60			4.22	7.25	5.22	2.90	2.50	1.50	1.15	1.60
26.	2.60	2.50			3.40	7.38	5.09	2.85	2.50	1.42	1.15	1.60
27.	2.60	2.50			3.40	7.40	5.04	2.85	2.50	1.42	1.20	1.65
28.	2.60	2.50			3.38	7.40	4.72	3.90	2.50	1.42	1.20	1.65
29.	2.60	2.60				7.30	4.50	4.10	2.50	1.40	1.25	1.65
30.	2.60	2.60				8.04	4.25	4.70	2.50	1.40	1.25	1.65
31.	2.60					9.88		4.65		1.40	1.25	

Daily gage height, in feet, of Malheur River at McLaughlin bridge, near Vale, Oreg., for 1905-6—Continued.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1906.				1906.				1906.			
1.....	1.65	1.90	2.35	11.....	1.70	.....	2.20	21.....	1.75	2.10	.....
2.....	1.65	1.90	2.35	12.....	1.70	1.95	2.20	22.....	1.80	2.10	.....
3.....	1.70	1.95	2.35	13.....	1.70	2.00	2.20	23.....	1.80	2.10	.....
4.....	1.70	1.95	2.35	14.....	1.65	2.00	2.20	24.....	1.80	2.10	.....
5.....	1.70	1.95	2.35	15.....	1.65	2.00	2.15	25.....	1.80	2.15	.....
6.....	1.70	1.95	2.40	16.....	1.65	2.00	2.15	26.....	1.80	2.15	.....
7.....	1.70	1.95	2.40	17.....	1.70	2.00	2.15	27.....	1.80	2.20	.....
8.....	1.70	1.95	2.40	18.....	1.70	2.00	2.15	28.....	1.80	2.20	.....
9.....	1.70	1.95	2.40	19.....	1.75	2.05	2.15	29.....	1.80	2.22	.....
10.....	1.70	1.95	2.30	20.....	1.75	2.10	.....	30.....	1.85	2.30	.....
								31.....	1.90	.....	.....

NOTE.—Ice in stream during January, February, and December, 1905. Ice reported in 1906 as follows: Jan. 1 to Feb. 22, river frozen over and gage read to top of ice; ice jam formed at bridge Feb. 22 and went out Feb. 25; Nov. 13-18, slush ice running in morning, but gage heights were read in afternoon and were probably not affected; Nov. 19, ice along edges and anchor ice in bottom; ice went out Dec. 11; Dec. 14-19, ice formed at night but went out in daytime; discharge relation probably unaffected.

Daily discharge, in second-feet, of Malheur River at McLaughlin bridge, near Vale, Oreg., for 1905.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1.....		1,300	940	410	255	122	24	13	64	122
2.....		1,390	995	455	265	90	22	13	64	122
3.....		1,420	1,300	475	245	90	24	17	64	122
4.....		1,470	1,420	460	290	84	22	17	64	122
5.....		1,460	1,160	450	340	76	17	17	64	122
6.....		1,440	1,020	410	340	71	17	17	64	122
7.....		1,590	3,980	355	425	64	17	22	64	122
8.....		1,500	1,060	310	715	64	13	22	64	122
9.....		1,380	1,160	290	455	64	17	24	64	122
10.....		1,460	1,140	295	515	48	17	27	64	122
11.....		1,500	1,140	275	455	32	15	27	64	122
12.....		1,770	1,060	315	435	24	17	27	64	122
13.....		2,140	940	285	315	32	17	27	60	122
14.....		2,170	940	245	325	32	11	31	64	122
15.....		1,940	940	245	290	52	17	32	76	122
16.....		1,590	840	220	265	52	11	32	84	122
17.....		1,420	790	210	245	52	11	38	90	122
18.....		1,360	790	200	220	48	11	42	96	122
19.....		1,340	715	180	220	42	13	42	96	140
20.....		1,340	715	170	215	36	13	46	105	130
21.....		1,770	715	160	180	32	13	52	110	130
22.....		1,640	680	160	160	29	16	52	110	130
23.....	1,100	1,340	650	160	150	24	15	52	110	130
24.....	1,900	1,340	650	160	140	24	15	52	115	122
25.....	2,080	1,260	580	160	140	24	16	52	122	122
26.....	2,030	1,100	580	245	122	24	16	64	122	90
27.....	1,640	1,060	615	180	122	32	16	64	122	90
28.....	1,460	1,140	580	455	122	24	17	64	122	90
29.....		1,020	500	265	122	24	13	64	122	122
30.....		980	485	280	122	23	13	64	122	122
31.....		940	.....	290	.....	22	13	.....	122	.....

NOTE.—Daily discharge determined as follows: Mar 1 to Apr. 15, and May 16 to Nov. 30, from a rating curve fairly well defined between 50 and 2,500 second-feet. Feb. 23-28, and Apr. 16 to May 15, by indirect method for shifting channels.

Monthly discharge of Malheur River at McLaughlin bridge near Vale, Oreg., for 1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
March.....	2,170	940	1,440	88,400	B.
April.....	3,980	485	971	57,800	B.
May.....	475	160	283	17,400	B.
June.....	715	122	274	16,300	B.
July.....	122	22	47.0	2,890	C.
August.....	24	11	15.8	972	C.
September.....	64	13	37.1	2,210	B.
October.....	122	44	88.3	5,430	B.
November.....	140	90	120	7,140	B.
The period.....				199,000	

MALHEUR RIVER AT VALE, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 29, T. 18 S., R. 45 E., at highway bridge one-fourth mile from Vale, just below the mouth of Bully Creek and $2\frac{1}{2}$ miles above mouth of Willow Creek.

Records presented.—March 20, 1890, to September 30, 1891; January 1, 1895, to September 30, 1896; April 15 to July 31, 1897; May 20, 1903, to March 31, 1907; May 29, 1908, to September 30, 1910.

Drainage area.—4,860 square miles.

Gage.—Inclined staff 50 feet above bridge, 1894 to 1897; inclined and vertical staff, 1903 to July 24, 1904; standard chain, July 25, 1904, to September 30, 1910.

Channel.—Bed, sand and gravel; banks, clay; shifting.

Discharge measurements.—Made from highway bridge until March 7, 1904, when a cable was installed one-fourth mile below the bridge. Low-water measurements made by wading.

Winter flow.—Slightly ice-affected for short periods.

Diversions.—Between McLaughlin bridge and the Vale station the Gillerman and Froman, Sand Hollow, and Hope Mill ditches divert. The Nevada takes out 1 mile and the Brosnan 11 miles below Vale.

Accuracy.—Results have been good when sufficient measurements have been made; poor in other years. The best records are those for 1890 and from April, 1904, to June, 1906.

Discharge measurements of Malheur River at Vale, Oreg., in 1890, 1894-1897, 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1890.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 22	Smith and Hopson	4.10	3,020	Jan. 25	Smith and Johnson	7.00	1,900
Apr. 11	F. M. Smith	3.70	2,570	28	do	5.50	800
21	do	3.75	2,560	Feb. 4	do	4.68	306
30	Smith and Kimmel	4.00	2,980	8	E. N. Smith	4.40	226
May 10	do	3.45	2,220	23	Smith and Griffin	6.15	1,160
19	do	2.45	1,160	24	do	7.00	2,130
June 5	W. B. Kimmel	1.60	457	Mar. 2	E. N. Smith	6.46	1,620
15	do	1.00	184	9	J. M. Griffin	6.45	1,400
23	do . . . . .	.90	150	14	P. H. Johnson	7.85	2,580
July 2	do . . . . .	.70	97	18	do	6.40	1,550
12	do . . . . .	.40	47	22	Smith and Johnson	6.80	1,780
21	do . . . . .	.10	23	27	do	6.08	1,280
Aug. 11	do . . . . .	.10	21	Apr. 11	J. M. Griffin	6.10	1,110
20	F. M. Smith	-1.10	6	19	do	5.60	740
				26	do	5.30	533
1894.				May 17	do	4.40	178
Dec. 10	A. P. Davis	1.90	128	June 5	E. N. Smith	4.70	343
1895.				12	do	5.00	410
Apr. 26	V. C. Tompkins	3.00	521	26	do	4.15	115
May 24	do	2.10	261	July 4	do	3.90	80
June 29	do . . . . .	.80	28	10	do	3.78	38.0
July 21	G. F. Sherman . . . . .	.58	9	21	do	3.71	34.7
1896.				29	do	3.67	27.6
Jan. 25	G. F. Sherman	3.20	852	Aug. 4	do	3.62	22.5
June 20	L. B. Kendall	3.40	1,020	11	do	3.59	16.9
July 19	do	1.62	168	17	do	3.58	13.7
Aug. 8	C. C. Babb . . . . .	.72	33	Sept. 8	G. H. Stubblefield	3.62	18.7
1897.				Oct. 14	R. S. Hall	3.90	48
Apr. 17	F. S. Shirley	7.15	4,860	Nov. 4	do	4.10	90
May 15	do	4.75	1,880	Dec. 27	do	4.30	115
28	G. H. Nickerson	4.37	1,690	1906.			
1903.				Jan. 29	R. S. Hall	4.45	212
May 20	N. S. Dils	5.00	327	Feb. 15	do	4.42	197
June 5	H. D. Newell	4.88	349	16	do	4.49	228
12	A. K. Sears	4.50	241	Mar. 2	do	4.93	432
19	E. I. Davis	4.35	193	24	do	6.83	1,990
26	do	3.95	87	25	do	9.30	5,300
29	J. H. Lewis	3.70	75	29	do	9.54	5,310
Aug. 13	do	3.02	11	Apr. 9	do	10.82	7,190
Sept. 25	do	3.52	39	24	do	7.58	2,840
Dec. 16	do	4.28	197	26	do	7.40	2,670
1904.				May 4	do	6.12	1,250
Mar. 11	J. H. Lewis	8.28	4,700	June 14	do	5.14	591
Apr. 5	Lewis and Newell	8.42	4,270	1907.			
12	H. D. Newell	9.33	6,140	Apr. 26	I. E. Oakes	6.75	1,790
16	do	10.22	7,910	1908.			
24	J. M. Griffin	8.75	5,670	May 29	H. D. McGlashan	4.05	150
May 9	Murphy and Sawyer	6.82	2,310	1909.			
June 15	J. M. Griffin	5.10	556	Oct. 20	F. F. Henshaw	3.70	97
16	Sawyer and Torkelson	4.98	430	1910.			
July 11	M. W. Torkelson	4.40	214	Sept. 18	F. C. Ebert	3.39	26.8
20	do	4.00	107	30	O. W. Hartwell	3.43	30.7
Aug. 6	Smith and Torkelson	3.75	47				
Sept. 24	E. N. Smith	3.78	57				
Oct. 10 ^a	do	4.08	75				

^a Measurement made by floats.

Daily gage height, in feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890.												
1.							3.5	3.95	1.7	0.7	0.1	-0.1
2.							3.45	3.95	1.7	.7	.1	- .1
3.							3.45	3.95	1.7	.7	.0	- .1
4.							3.75	3.9	1.7	.6	.0	- .1
5.							3.95	3.7	1.6	.6	.0	- .1
6.							4.15	3.7	1.6	.6	.0	- .1
7.							4.25	3.6	1.5	.5	.0	- .1
8.							4.25	3.5	1.4	.5	.0	- .1
9.							4.35	3.4	1.3	.4	.0	- .1
10.							4.35	3.4	1.3	.4	- .1	- .1
11.							4.0	3.5	1.2	.4	- .1	- .1
12.							3.75	3.3	1.1	.4	- .1	- .1
13.							3.9	3.2	1.0	.3	- .1	- .1
14.							3.75	3.0	1.0	.3	- .1	- .1
15.							3.65	2.8	1.0	.3	- .1	- .1
16.							3.5	2.6	1.0	.3	- .1	- .1
17.							3.4	2.5	.95	.3	- .1	- .1
18.							3.45	2.45	.95	.3	- .1	- .1
19.							3.55	2.4	.95	.3	- .1	- .1
20.						4.95	3.7	2.4	.9	.2	- .1	- .1
21.						4.55	3.75	2.4	.9	.1	- .1	- .1
22.						4.1	3.85	2.35	.9	.1	- .1	- .1
23.						4.2	4.0	2.3	.9	.1	- .1	- .1
24.						4.4	4.1	2.15	.9	.1	- .1	- .1
25.						4.3	4.1	2.1	.9	.1	- .1	- .1
26.						3.9	4.0	2.1	.9	.1	- .1	- .1
27.						3.6	4.0	2.1	.9	.1	- .1	- .1
28.						3.4	3.95	2.0	.8	.1	- .1	- .1
29.						3.1	3.9	2.0	.8	.1	- .1	- .1
30.						3.1	3.9	1.9	.8	.1	- .1	- .1
31.						3.6		1.8		.1	- .1	- .1
1890-91.												
1.	-0.1	0.6	0.8	0.6		1.35	1.9	1.35	.75	.3	.0	.1
2.	.1	.6	.8	.7		2.75	1.85	1.2	.7	.35	.0	.05
3.	.1	.65	.8	.7		2.5	1.85	1.2	.75	.3	.1	.05
4.	.1	.65	.8	.7		2.0	1.7	1.25	.7	.3	.1	.0
5.	.3	.65	.8	.7		1.7	1.7	1.4	6.5	.3	.1	.0
6.	.3	.7	.8	.7		1.35	1.6	1.35	.6	.3	.2	.0
7.	.3	.7	.7	.8		1.3	1.7	1.25	.6	.25	.2	.0
8.	.3	.7	.7	.8		1.2	1.75	1.15	.55	.25	.2	.05
9.	.3	.7	.7	.8		1.4	1.6	1.15	.55	.25	.2	.05
10.	.3	.75	.7	.8		2.25	1.45	1.15	1.0	.3	.15	.1
11.	.3	.75	.7	.75		2.75	1.4	1.1	.9	.35	.15	.1
12.	.3	.75	.7	.75		2.15	1.4	1.1	.85	.3	.1	.1
13.	.3	.8	.7	.75		1.7	1.55	1.0	.7	.3	.1	.1
14.	.4	.8	.65	.7	0.65	1.6	1.6	1.05	.7	.25	.1	.1
15.	.4	.8	.65	.7	1.1	1.6	1.7	1.1	.7	.25	.1	.1
16.	.5	.8	.65	.7	1.1	1.8	1.85	1.15	.65	.2	.1	.1
17.	.5	.8	.65	.7	1.0	1.9	1.85	1.1	.65	.2	.1	.1
18.	.5	.8	.65	.7	1.0	2.0	1.9	1.15	.6	.2	.1	.1
19.	.5	.9	.6	.65	.9	1.85	1.9	1.1	.6	.2	.1	.1
20.	.5	.9	.6	.65	.9	1.8	1.8	1.0	.55	.15	.15	.05
21.	.5	.9	.6	.65	.9	1.85	1.75	.95	.55	.15	.15	.05
22.	.5	.9	.6	.6	.9	1.85	1.7	.95	.55	.15	.15	.05
23.	.5	.9	.55	.6	3.9	1.85	1.75	.9	.5	.15	.15	.0
24.	.5	.9	.55	.6	2.6	1.9	1.7	.9	.45	.15	.15	.0
25.	.5	.9	.55	.6	2.3	1.8	1.6	.95	.45	.1	.15	.0
26.	.5	.9	.55	.6	1.7	1.9	1.7	.9	.6	.1	.1	.0
27.	.5	.9	.55	.6	1.5	2.1	1.6	.85	.45	.05	.1	.05
28.	.55	.9	.6	.65	1.35	2.3	1.55	.85	.45	.05	.1	.05
29.	.55	.9	.6	.65		2.3	1.5	.8	.4	.0	.1	.05
30.	.55	.8	.6	.65		2.15	1.35	.8	.4	.0	.1	.0
31.	.55		.6	.65		2.1		.8		.0	.1	

Daily gage height, in feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1				1.95	1.5	2.4	3.05	2.85	2.0	0.8	0.58	0.61
2				2.0	1.95	2.35	3.25	2.8	2.0	.85	.59	.61
3				2.05	2.05	2.3	3.6	2.75	2.05	.7	.6	.61
4				2.1	2.05	2.25	3.45	2.7	2.0	.7	.6	.61
5				2.15	2.15	2.25	3.25	2.7	1.9	.65	.6	.61
6				2.3	2.15	2.25	3.25	2.75	1.8	.6	.59	.62
7				2.3	2.1	2.25	3.0	2.85	1.8	.7	.58	.62
8				2.3	2.15	2.3	2.85	2.9	1.75	.7	.58	.62
9				2.2	2.15	2.15	2.85	2.75	1.7	.7	.6	.62
10				2.15	2.15	2.4	3.05	2.7	1.65	.7	.6	1.0
11				2.15	2.15	2.6	3.25	2.65	1.6	.7	.6	1.1
12				2.2	2.0	2.9	3.3	2.55	1.6	.7	.6	1.1
13				2.2	2.1	2.95	3.35	2.4	1.6	.7	.6	1.2
14				2.15	2.15	2.7	3.25	2.35	1.6	.6	.59	1.35
15				2.25	2.15	2.4	3.3	2.4	1.6	.6	.58	1.4
16				2.25	2.15	2.05	3.25	2.25	1.6	.6	.6	1.55
17				2.25	2.1	2.35	3.25	2.2	1.5	.6	.6	1.55
18				2.15	2.15	2.25	3.25	2.2	1.45	.6	.6	1.5
19				2.15	2.2	2.35	3.4	2.2	1.35	.5	.59	1.5
20				2.1	2.15	2.25	3.3	2.1	1.25	.5	.58	1.45
21				2.15	2.2	2.35	3.2	2.1	1.15	.5	.6	1.4
22				2.15	2.6	2.35	3.25	2.15	1.1	.58	.6	1.4
23				2.1	3.15	2.35	3.25	2.1	1.05	.58	.6	1.4
24				2.1	3.2	2.35	3.3	2.1	1.0	.58	.6	1.5
25				2.25	3.25	2.55	3.05	2.0	1.0	.58	.6	1.5
26				2.1	3.0	3.15	3.0	2.0	1.0	.58	.6	1.4
27				1.9	2.6	3.6	3.0	1.95	1.0	.58	.6	1.5
28				1.95	2.6	4.1	3.0	1.9	.95	.59	.6	1.5
29				1.95		4.25	2.95	2.1	.9	.6	.61	1.5
30				1.95		4.4	2.9	2.15	.8	.58	.61	1.45
31				1.95		3.15		2.0		.58	.61	
1895-96.												
1	1.4	1.5	1.7	1.7	2.55			3.0	4.3	2.45	1.0	1.6
2	1.4	1.5	1.7	1.75	2.65			3.0	4.35	2.35	.95	1.45
3	1.4	1.5	1.6	1.8	2.7			3.05	4.5	2.3	.9	1.2
4	1.4	1.5	1.6	1.9	2.6			3.1	4.5	2.25	.9	1.1
5	1.4	1.5	1.65	1.9	2.6			3.85	4.45	2.15	.9	1.1
6	1.4	1.5	1.7	1.9	2.5			4.9	4.3	2.1	.85	1.1
7	1.4	1.5	1.7	1.85	2.5			4.65	4.25	2.1	.75	1.1
8	1.5	1.5	1.6	1.9	2.4			4.05	4.25	2.05	.7	1.1
9	1.45	1.5	1.6	1.85	2.35			3.85	4.1	1.95	.7	1.1
10	1.4	1.6	1.7	1.85	2.25			3.8	4.05	1.9	.71	1.1
11	1.4	1.6	1.7	1.7	2.2			3.7	3.9	1.85	.72	1.1
12	1.4	1.6	1.7	1.7	2.1			3.7	3.75	1.8	.72	1.1
13	1.4	1.6	1.7	1.7	2.0			3.75	3.7	1.85	.71	1.1
14	1.4	1.6	1.7	1.7	2.0			3.65	3.6	1.9	.71	1.1
15	1.4	1.6	1.7	1.7	2.0			3.45	3.5	1.95	.71	1.1
16	1.5	1.6	1.6	1.75	2.0			3.3	3.5	1.9	.7	1.1
17	1.45	1.6	1.6	5.0	2.0			3.3	3.5	1.9	.7	1.1
18	1.4	1.6	1.6		2.05			3.3	3.4	1.65	.7	1.1
19	1.4	1.6	1.7		2.1			3.3	3.35	1.6	.7	1.1
20	1.45	1.6	1.8		2.1			3.2	3.4	1.5	.7	1.15
21	1.5	1.75	1.7		2.0			3.15	3.35	1.5	.7	1.2
22	1.5	1.9	1.7		1.95			3.1	3.3	1.45	.7	1.2
23	1.5	1.85	1.65		2.05			3.1	3.25	1.4	.7	1.2
24	1.5	1.85	1.7		2.2			3.25	3.15	1.4	.7	1.2
25	1.5	1.7	1.7	3.2	2.3			3.55	3.05	1.3	.69	1.2
26	1.5	1.6	1.7	3.1	2.15		2.9	3.75	3.4	1.3	.68	1.2
27	1.5	1.65	1.75	2.9	2.2		3.0	3.9	3.35	1.25	.68	1.25
28	1.5	1.7	1.9	2.75	2.3		3.0	4.0	2.75	1.2	.7	1.25
29	1.5	1.7	1.9	2.6	2.95		3.0	4.1	2.65	1.15	.7	1.25
30	1.5	1.7	1.8	2.55			3.0	4.2	2.55	1.1	.7	1.25
31	1.5		1.7	2.65				4.2		1.0	2.2	

Daily gage height, in feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Apr.	May.	June.	July.	Day.	Apr.	May.	June.	July.
1897.					1897.				
1.....		6.1	3.75	2.43	16.....	6.75	4.7	2.5	1.9
2.....		6.1	3.55	2.4	17.....	7.25	4.8	2.45	1.87
3.....		6.1	3.45	2.4	18.....	8.3	5.0	2.4	1.75
4.....		5.95	3.25	2.35	19.....	8.95	4.9	2.4	1.65
5.....		5.95	3.1	2.3	20.....	9.3	4.9	2.5	1.55
6.....		5.9	3.2	2.3	21.....	10.1	4.85	2.43	1.5
7.....		6.05	3.05	2.28	22.....	8.5	4.6	2.4	1.5
8.....		6.1	3.0	2.2	23.....	7.7	4.5	2.4	1.45
9.....		5.8	2.9	2.2	24.....	7.2	4.45	2.4	1.4
10.....		5.4	2.95	2.18	25.....	6.6	4.4	2.38	1.4
11.....		5.15	2.75	2.13	26.....	6.45	4.35	2.85	1.4
12.....		5.05	2.65	2.1	27.....	6.65	4.35	2.68	1.38
13.....		4.95	2.55	2.0	28.....	7.0	4.35	2.65	1.33
14.....		4.8	2.5	1.98	29.....	7.1	4.15	2.6	1.3
15.....	6.55	4.7	2.5	1.9	30.....	6.6	3.95	2.55	1.25
					31.....		3.8		1.2

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....		4.5	3.7	3.3	3.5	16.....		4.6	3.8	3.0	3.5
2.....		4.6	3.7	3.3	3.5	17.....		4.55	3.8	3.0	3.5
3.....		4.7	3.7	3.3	3.5	18.....		4.45	3.8	3.0	3.5
4.....		4.8	3.7	3.3	3.5	19.....		4.4	3.8	3.0	3.5
5.....		4.9	3.7	3.3	3.5	20.....	5.0	4.35	3.8	3.0	3.5
6.....		4.9	3.7	3.25	3.5	21.....		5.0	4.2	3.8	3.0
7.....		4.8	3.65	3.2	3.5	22.....	4.85	4.2	3.8	3.0	3.5
8.....		4.75	3.6	3.2	3.5	23.....		4.8	4.15	3.7	3.0
9.....		4.65	3.6	3.2	3.5	24.....		4.8	4.1	3.6	3.0
10.....		4.6	3.6	3.2	3.5	25.....		4.7	4.1	3.5	3.0
11.....		4.6	3.7	3.15	3.5	26.....	4.6	4.0	3.5	3.1	3.5
12.....		4.5	3.75	3.05	3.5	27.....	4.55	3.9	3.5	3.1	3.5
13.....		4.5	3.8	3.0	3.5	28.....		4.5	3.85	3.5	3.2
14.....		4.5	3.8	3.0	3.5	29.....		4.5	3.75	3.5	3.35
15.....		4.6	3.8	3.0	3.5	30.....		4.5	3.7	3.45	3.4
						31.....	4.5		3.35	3.5	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	3.5	4.0	4.5	4.2	4.8	7.0	7.7	8.2	5.65	4.2	3.78	3.75
2.....	3.55	4.0	4.5	4.0	4.75	7.0	7.4	7.95	5.6	4.2	3.8	3.7
3.....	3.6	4.0	4.45	4.1	4.5	6.68	8.7	7.8	5.6	4.2	3.8	3.7
4.....	3.6	4.0	4.4	4.2	4.25	6.45	8.3	7.6	5.6	4.2	3.7	3.7
5.....	3.7	4.0	4.4	4.2	4.2	6.9	8.55	7.45	5.6	4.2	3.8	3.7
6.....	3.7	4.0	4.4	4.15	4.2	7.5	8.5	7.35	5.5	4.1	3.75	3.7
7.....	3.7	4.0	4.3	4.25	4.2	9.1	8.25	7.1	5.5	4.1	3.7	3.7
8.....	3.8	4.0	4.65	4.35	4.1	10.55	8.08	6.95	5.5	4.7	3.7	3.7
9.....	3.8	4.0	4.5	4.5	4.0	10.9	8.0	6.8	5.4	4.45	3.7	3.7
10.....	3.8	4.1	4.45	4.35	4.2	9.5	8.4	6.8	5.4	4.2	3.8	3.7
11.....	3.8	4.15	4.4	4.3	4.4	8.1	8.7	6.7	5.3	4.3	3.8	3.7
12.....	3.9	4.1	4.3	4.3	4.55	7.7	9.3	6.7	5.3	4.4	3.8	3.7
13.....	3.9	4.15	4.3	4.3	4.5	7.1	9.6	6.65	5.2	4.4	3.8	3.7
14.....	3.9	4.2	4.35	4.3	4.3	6.95	9.8	6.6	5.15	4.35	3.8	3.7
15.....	3.9	4.3	4.3	4.35	4.45	7.05	10.2	6.5	5.1	4.2	3.8	3.7
16.....	3.9	4.3	4.3	4.45	10.15	7.15	10.2	6.5	5.0	4.2	3.8	3.7
17.....	3.9	4.3	4.3	4.6	8.75	6.95	9.9	6.45	4.9	4.2	3.8	3.7
18.....	3.95	4.3	4.3	4.65	8.55	7.65	9.55	6.4	4.8	4.15	3.8	3.7
19.....	4.0	4.3	4.3	4.6	7.1	8.05	9.3	6.35	4.8	4.1	3.8	3.7
20.....	4.0	4.2	4.3	4.5	6.45	8.4	10.1	6.3	4.75	4.0	3.8	3.7
21.....	4.0	4.2	4.3	4.4	6.0	8.28	10.55	6.2	4.7	4.0	3.8	3.7
22.....	4.0	4.3	4.2	4.45	13.6	7.2	10.9	6.1	4.7	4.0	3.8	3.75
23.....	4.0	4.6	4.2	4.55	10.2	7.05	9.7	6.1	4.7	4.0	3.75	3.75
24.....	4.0	5.35	4.2	4.6	11.1	6.7	9.05	6.15	4.6	4.0	3.75	3.8
25.....	4.0	5.35	4.3	4.6	13.7	6.38	8.7	6.2	4.6	3.9	3.75	3.85
26.....	4.0	5.3	4.2	4.8	9.85	6.2	8.45	6.2	4.55	3.95	3.75	3.9
27.....	4.0	5.15	4.5	4.8	8.15	6.22	8.15	6.05	4.5	3.92	3.75	4.0
28.....	4.0	4.95	4.15	4.7	7.4	6.4	8.35	6.0	4.4	3.9	3.8	3.95
29.....	4.0	4.75	4.1	4.65	6.9	7.6	8.5	5.95	4.4	3.88	3.8	3.9
30.....	4.0	4.6	4.15	4.6		8.45	8.35	5.8	4.3	3.82	3.75	3.9
31.....	4.0		4.35	4.75		8.3		5.7		3.82	3.75	

Daily gage height, in feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	3.9	4.2	4.35	4.35	4.85	6.35	5.9	5.13	4.45	4.0	3.62	3.56
2.....	3.9	4.2	4.32	4.75	4.7	6.5	6.0	5.1	4.47	4.0	3.63	3.57
3.....	3.9	4.2	4.25	4.6	4.7	6.55	6.3	5.1	4.38	4.0	3.6	3.58
4.....	3.9	4.2	4.1	4.8	4.7	6.45	6.45	4.97	4.45	3.9	3.6	3.6
5.....	3.92	4.2	4.28	4.7	4.6	6.7	6.25	4.92	4.7	3.9	3.57	3.6
6.....	3.95	4.25	4.1	4.6	4.6	6.6	5.97	4.88	4.6	3.9	3.6	3.6
7.....	4.0	4.25	4.2	4.6	4.55	6.75	5.9	4.77	4.7	3.85	3.59	3.6
8.....	4.4	4.25	4.28	4.6	4.5	6.75	6.23	4.7	5.05	3.85	3.56	3.62
9.....	4.1	4.25	4.25	4.4	4.45	6.45	6.3	4.63	5.05	3.77	3.54	3.63
10.....	4.1	4.25	4.2	4.2	4.45	6.4	6.13	4.6	5.02	3.73	3.59	3.63
11.....	4.1	4.3	4.25	4.25	4.4	6.5	6.12	4.52	5.1	3.7	3.56	3.66
12.....	4.1	4.25	4.35	4.25	4.45	6.8	6.0	4.5	4.97	3.65	3.59	3.68
13.....	4.2	4.25	4.35	4.25	4.25	7.1	5.85	4.5	4.85	3.62	3.58	3.68
14.....	4.2	4.25	4.4	4.35	4.4	7.3	5.85	4.5	4.7	3.6	3.54	3.69
15.....	4.2	4.25	4.35	4.15	4.5	7.15	5.78	4.45	4.63	3.6	3.54	3.68
16.....	4.2	4.25	4.1	4.30	4.55	6.7	5.67	4.4	4.52	3.68	3.49	3.69
17.....	4.2	4.25	4.4	4.55	4.5	6.5	5.55	4.33	4.5	3.67	3.54	3.72
18.....	4.3	4.3	4.4	5.4	4.4	6.4	5.5	4.2	4.45	3.7	3.54	3.76
19.....	4.3	4.3	4.4	5.05	4.35	6.45	5.6	4.2	4.65	3.75	3.55	3.78
20.....	4.2	4.3	4.4	5.4	4.5	6.45	5.5	4.2	4.4	3.75	3.58	3.79
21.....	4.2	4.3	4.35	5.35	4.6	6.8	5.5	4.2	4.32	3.7	3.58	3.8
22.....	4.2	4.3	4.2	5.15	5.95	6.8	5.5	4.2	4.25	3.7	3.59	3.8
23.....	4.25	4.3	4.25	5.6	6.3	6.55	5.43	4.17	4.2	3.65	3.59	3.82
24.....	4.2	4.35	4.35	7.95	6.95	6.45	5.42	4.15	4.15	3.65	3.6	3.84
25.....	4.2	4.35	4.2	6.92	7.25	6.35	5.4	4.15	4.15	3.65	3.61	3.82
26.....	4.2	4.38	4.3	6.17	7.1	6.22	5.35	4.15	4.15	3.62	3.59	3.82
27.....	4.2	4.4	4.3	5.74	6.85	6.08	5.28	4.25	4.1	3.6	3.57	3.83
28.....	4.22	4.4	4.4	5.5	6.55	6.12	5.3	4.6	4.5	3.6	3.58	3.84
29.....	4.2	4.4	4.25	5.35	.....	6.05	5.32	4.58	4.0	3.6	3.57	3.82
30.....	4.2	4.4	4.25	5.15	.....	5.98	5.23	4.9	4.3	3.62	3.58	3.83
31.....	4.2	.....	4.75	5.0	.....	5.9	.....	4.65	.....	3.63	3.57	.....
1905-6.												
1.....	3.80	4.15	4.28	4.39	4.37	5.23	14.34	6.36	6.36	4.30	3.44	3.40
2.....	3.81	4.06	4.19	4.16	4.35	4.95	11.55	6.26	5.88	4.26	3.40	3.40
3.....	3.84	4.08	4.29	4.14	4.31	4.78	9.82	6.20	5.61	4.18	3.40	3.41
4.....	3.86	4.10	4.43	4.40	4.30	4.75	9.52	6.12	5.50	4.14	3.36	3.42
5.....	3.86	4.11	4.41	4.48	4.31	4.74	9.50	6.02	5.58	4.12	3.33	3.44
6.....	3.88	4.16	4.35	4.34	4.66	4.84	9.88	5.95	5.88	4.10	3.32	3.51
7.....	3.88	4.14	4.37	4.49	4.50	4.87	10.51	5.89	5.76	4.03	3.29	3.48
8.....	3.86	4.16	4.40	4.24	4.32	5.36	10.62	5.76	5.85	3.96	3.29	3.50
9.....	3.86	4.17	4.05	4.16	4.43	5.80	10.86	5.64	5.75	3.94	3.28	3.51
10.....	3.88	4.16	4.36	4.18	4.27	6.10	10.54	5.56	5.57	3.90	3.26	3.49
11.....	3.86	4.20	4.31	4.19	4.27	6.35	9.86	5.51	5.46	3.82	3.26	3.50
12.....	3.90	4.16	3.90	4.20	4.28	6.07	8.93	5.61	5.38	3.76	3.30	3.51
13.....	3.90	4.18	3.79	4.20	4.31	5.56	8.52	5.62	5.24	3.72	3.25	3.50
14.....	3.90	4.11	3.92	4.22	4.36	5.18	8.30	5.52	5.18	3.66	3.24	3.50
15.....	3.90	4.19	4.24	4.28	4.41	5.34	8.44	5.40	5.10	3.62	3.25	3.54
16.....	3.98	4.20	4.15	4.20	4.49	5.27	8.49	5.38	5.04	3.55	3.25	3.58
17.....	4.01	4.21	4.20	4.38	4.52	4.68	8.62	5.32	4.98	3.50	3.25	3.58
18.....	4.07	4.26	4.28	4.24	4.52	4.55	8.54	5.26	4.87	3.50	3.24	3.59
19.....	4.06	4.20	4.30	4.25	4.54	4.55	8.23	5.16	4.82	3.51	3.21	3.64
20.....	4.10	4.24	4.36	4.38	4.80	4.76	7.90	5.04	4.75	3.49	3.20	3.63
21.....	4.12	4.24	4.47	4.54	5.28	4.76	7.82	4.98	4.68	3.48	3.20	3.64
22.....	4.10	4.22	4.82	4.36	5.23	4.80	7.79	4.90	4.60	3.34	3.20	3.66
23.....	4.08	4.18	4.72	4.36	5.51	5.09	7.75	4.83	4.53	3.37	3.18	3.64
24.....	4.10	4.08	4.30	4.34	5.21	6.98	7.58	4.78	4.44	3.20	3.20	3.64
25.....	4.12	4.18	4.42	4.33	5.22	9.36	7.47	4.72	4.38	3.38	3.22	3.64
26.....	4.10	4.26	4.31	4.65	4.90	9.48	7.38	4.68	4.38	3.34	3.28	3.63
27.....	4.13	4.31	4.27	4.42	4.82	9.53	7.22	4.64	4.31	3.39	3.30	3.66
28.....	4.14	4.34	4.64	4.46	4.90	9.82	6.96	4.80	4.27	3.50	3.31	3.65
29.....	4.18	4.33	4.50	4.47	.....	9.45	6.60	5.16	4.22	3.50	3.34	3.64
30.....	4.14	4.34	4.34	4.42	.....	10.28	6.44	6.80	4.32	3.50	3.31	3.65
31.....	4.14	.....	4.31	4.38	.....	12.75	.....	6.93	.....	3.50	3.39	.....

Daily gage height, in feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.							1906-7.						
1.....	3.68	3.90	4.01	4.28	7.06	5.92	16.....	3.73	4.06	4.20	4.30	5.87	5.40
2.....	3.68	3.92	4.01	4.24	6.70	5.82	17.....	3.74	4.06	4.15	4.27	5.85	7.20
3.....	3.71	3.93	3.98	4.26	5.67	5.75	18.....	3.74	4.05	4.17	4.25	5.87	8.05
4.....	3.72	3.94	3.96	4.28	9.18	5.61	19.....	3.75	4.04	4.22	4.24	5.80	9.52
5.....	3.73	3.98	3.97	4.43	13.02	5.56	20.....	3.77	4.11	4.20	4.21	5.70	10.41
6.....	3.72	3.99	3.98	4.40	11.20	5.48	21.....	3.77	4.12	4.17	4.24	5.72	9.30
7.....	3.74	4.02	4.02	4.42	9.40	5.56	22.....	3.81	4.07	4.24	4.26	5.81	8.54
8.....	3.74	4.02	4.12	4.44	7.70	5.82	23.....	3.88	4.00	4.21	4.28	5.82	8.14
9.....	3.73	4.04	4.22	4.45	6.92	5.74	24.....	3.90	3.92	4.22	4.28	5.98	7.74
10.....	3.72	4.08	4.21	4.49	6.49	5.70	25.....	3.92	3.88	4.22	4.27	5.92	7.32
11.....	3.73	4.04	4.22	4.46	6.37	5.68	26.....	3.94	3.92	4.22	4.28	6.15	7.12
12.....	3.74	4.04	4.21	4.39	6.26	5.69	27.....	3.91	4.00	4.26	4.27	6.56	6.90
13.....	3.74	4.03	4.23	4.32	6.04	5.62	28.....	3.90	4.16	4.48	4.28	6.16	6.67
14.....	3.70	4.03	4.22	4.32	5.92	5.52	29.....	3.90	4.12	4.69	4.42	.....	6.45
15.....	3.72	4.05	4.24	4.32	5.88	5.44	30.....	3.89	4.03	4.58	6.67	.....	6.25
							31.....	3.90	.....	4.50	7.02	.....	6.22
Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.		
1908.						1908.							
1.....		4.08	4.00	3.35	3.46	16.....		4.20	3.65	3.28	3.46		
2.....		4.10	3.92	3.32	3.45	17.....		4.18	3.48	3.25	3.46		
3.....		4.15	3.90	3.30	3.43	18.....		4.15	3.50	3.25	3.48		
4.....		4.18	3.88	3.28	3.45	19.....		4.10	3.45	3.28	3.60		
5.....		4.18	3.85	3.30	3.45	20.....		4.12	3.42	3.28	3.62		
6.....		4.19	3.92	3.28	3.45	21.....		4.20	3.40	3.25	3.60		
7.....		4.15	3.80	3.25	3.47	22.....		4.25	3.40	3.23	3.65		
8.....		4.14	3.74	3.25	3.48	23.....		4.25	3.34	3.35	3.67		
9.....		4.14	3.75	3.24	3.45	24.....		4.30	3.40	3.35	3.65		
10.....		4.10	3.70	3.22	3.45	25.....		4.28	3.35	3.38	3.65		
11.....		4.20	3.55	3.20	3.46	26.....		4.25	3.40	3.38	3.54		
12.....		4.22	3.52	3.22	3.46	27.....		4.14	3.40	3.38	3.55		
13.....		4.22	3.55	3.22	3.45	28.....		4.02	3.42	3.38	3.56		
14.....		4.20	3.50	3.25	3.43	29.....	4.08	4.08	3.45	3.38	3.55		
15.....		4.18	3.95	3.30	3.45	30.....	4.06	4.02	3.40	3.38	3.56		
						31.....	4.08	.....	3.30	3.39	.....	

Daily gage height, in feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	3.70	3.96	3.65	3.91	4.70	4.85	5.55	4.88	4.52	3.80	3.23	3.17
2.....	3.78	3.95	4.15	3.93	4.70	5.40	5.60	4.80	4.52	3.59	3.23	3.17
3.....	3.62	3.95	3.85	3.68	4.72	5.55	5.65	4.74	4.54	3.56	3.22	4.92
4.....	3.65	3.98	4.01	3.65	4.70	5.60	5.85	4.69	4.54	3.52	3.23	4.71
5.....	3.65	3.90	4.03	3.59	4.71	5.62	5.70	4.62	4.68	3.50	3.21	4.58
6.....	3.65	3.95	4.03	3.55	4.70	5.58	5.60	4.58	4.75	3.48	3.21	4.27
7.....	3.62	3.95	4.05	3.55	4.80	5.35	5.47	4.58	4.70	3.48	3.20	4.20
8.....	3.64	3.90	4.05	6.04	4.68	5.12	5.30	4.56	4.65	3.47	3.20	3.77
9.....	3.63	3.88	4.07	6.25	4.55	4.95	5.16	4.60	4.60	3.44	3.18	3.62
10.....	3.64	3.86	4.13	6.25	4.45	4.90	5.17	4.54	4.56	3.40	3.17	3.57
11.....	3.64	3.85	4.12	6.15	4.78	4.85	5.35	4.53	4.50	3.55	3.17	3.52
12.....	3.64	3.84	4.10	4.80	4.90	4.70	5.35	4.53	4.50	3.50	3.19	3.47
13.....	3.65	3.92	4.08	4.80	4.91	4.66	5.38	4.46	4.45	3.50	3.17	3.47
14.....	3.68	3.93	4.02	4.78	5.80	4.77	5.45	4.42	4.42	3.48	3.20	3.62
15.....	3.70	3.92	4.82	4.78	5.81	5.00	5.45	4.37	4.30	3.47	3.17	3.59
16.....	3.82	3.93	3.69	10.98	5.56	5.35	5.54	4.34	4.24	3.47	3.19	3.57
17.....	3.90	3.96	3.65	10.00	7.75	5.80	5.54	4.28	4.18	3.46	3.20	3.58
18.....	3.95	3.95	3.68	8.80	7.06	5.60	5.58	4.22	4.15	3.45	3.20	3.57
19.....	3.96	3.96	3.70	8.80	6.45	5.35	5.52	4.12	4.15	3.45	3.17	3.57
20.....	3.95	3.97	3.70	8.85	6.07	5.55	5.48	4.14	4.39	3.45	3.17	3.57
21.....	3.95	3.98	3.70	8.40	5.48	5.33	5.42	4.15	4.26	3.45	3.17	3.55
22.....	3.94	4.01	3.68	8.20	5.20	5.25	5.28	4.14	4.19	3.44	3.16	3.57
23.....	3.92	4.04	3.72	7.16	5.12	5.05	5.18	4.17	4.18	3.43	3.15	3.59
24.....	3.88	4.06	3.72	6.85	5.02	5.05	5.16	4.20	4.15	3.38	3.15	3.57
25.....	3.85	4.08	3.74	5.52	4.90	5.12	5.16	4.18	4.08	3.37	3.13	3.57
26.....	3.85	4.03	3.80	5.20	4.90	5.22	4.92	4.22	4.02	3.37	3.16	3.57
27.....	3.88	4.00	3.84	5.07	4.88	5.35	4.90	4.24	3.91	3.34	3.15	3.59
28.....	3.88	3.88	3.84	5.04	4.85	5.53	4.90	4.28	3.86	3.33	3.16	3.60
29.....	3.87	3.86	3.87	4.84	.....	5.70	4.90	4.39	3.82	3.33	3.15	3.62
30.....	3.95	3.80	3.87	4.45	.....	5.82	4.93	4.39	3.84	3.31	3.15	3.62
31.....	3.96	.....	3.91	4.72	.....	5.58	.....	4.42	.....	3.32	3.15	.....
1909-10.												
1.....	3.65	3.80	4.32	4.1	4.7	10.1	5.9	5.1	3.25	3.35	.....	.....
2.....	3.65	3.80	4.48	4.1	4.7	17.5	5.95	5.05	3.25	.....	.....	.....
3.....	3.69	3.81	4.48	4.4	4.65	13.55	6.0	5.05	3.15	.....	3.25	.....
4.....	3.67	3.80	4.49	4.4	4.5	10.3	6.0	4.95	3.15	.....	.....	.....
5.....	3.67	3.82	4.37	4.4	4.35	8.3	5.75	4.85	3.25	.....	.....	.....
6.....	3.65	3.82	4.30	4.4	4.35	8.0	5.8	4.85	3.35	.....	.....	.....
7.....	3.62	3.84	4.30	4.4	4.35	7.9	5.8	4.9	3.35	.....	.....	.....
8.....	3.59	3.84	4.19	4.4	4.35	7.75	5.8	4.85	3.35	.....	.....	.....
9.....	3.55	3.86	3.98	4.4	4.4	7.1	5.9	4.8	3.35	.....	.....	.....
10.....	3.52	3.86	3.87	4.4	4.4	6.85	5.9	4.75	3.35	.....	.....	.....
11.....	3.54	3.87	3.80	4.4	4.4	6.85	5.9	4.35	3.35	3.35	.....	3.35
12.....	3.60	3.90	3.59	4.5	4.4	6.85	6.0	4.35	3.3	.....	.....	.....
13.....	3.64	3.92	3.59	4.55	4.45	7.00	5.85	4.3	3.3	.....	.....	.....
14.....	3.67	3.90	3.56	4.55	4.45	7.15	5.85	4.2	3.3	.....	.....	.....
15.....	3.67	3.90	3.55	4.55	4.5	7.25	5.75	4.15	3.35	.....	.....	.....
16.....	3.67	3.92	3.56	4.4	6.2	7.15	5.6	4.15	3.35	.....	.....	.....
17.....	3.67	3.88	3.55	4.35	5.1	7.05	5.5	4.1	3.35	.....	.....	.....
18.....	3.67	3.88	3.52	4.3	4.1	7.00	5.5	4.1	3.35	.....	.....	3.4
19.....	3.67	3.84	3.52	4.3	3.3	7.1	5.5	4.0	3.35	.....	.....	3.4
20.....	3.65	3.84	3.60	4.3	4.0	7.4	5.5	3.95	3.35	.....	.....	3.4
21.....	3.70	3.98	3.72	4.3	4.2	8.3	5.5	3.9	3.35	.....	3.3	3.4
22.....	3.70	3.98	3.90	4.3	4.6	8.8	5.5	3.85	3.4	.....	.....	3.4
23.....	3.69	4.02	3.90	4.3	4.9	8.5	5.45	3.65	3.4	.....	.....	3.4
24.....	3.70	4.40	4.00	4.25	5.0	8.6	5.45	3.65	3.4	.....	.....	3.4
25.....	3.70	4.60	4.00	4.25	5.8	9.1	5.4	3.6	3.4	.....	.....	3.4
26.....	3.72	4.62	4.10	4.25	7.0	7.15	5.35	3.55	3.35	.....	.....	3.4
27.....	3.72	4.43	4.10	4.4	9.15	6.75	5.2	3.5	3.35	.....	.....	3.4
28.....	3.74	4.28	4.10	4.4	12.05	6.35	5.2	3.5	3.35	.....	.....	3.35
29.....	3.75	4.22	4.10	4.45	.....	6.1	5.2	3.35	3.35	.....	.....	3.45
30.....	3.75	4.27	4.10	4.7	.....	6.05	5.2	3.4	3.35	3.25	.....	3.5
31.....	3.78	.....	4.10	4.7	.....	5.9	.....	3.35	.....	.....	.....	.....

NOTE.—Gage heights affected by ice Feb. 1-13, 1891; part of January and December, 1905; Nov. 22 to Dec. 20, 1906; Jan. 1 to Feb. 5, 1907; Dec. 18, 1908, to Jan. 2, 1909; Jan. 12-15, 1909, and Dec. 22, 1909, to Jan. 30, 1910; possibly also other periods of which record is lacking.

Discharge, in second-feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1890.												
1							2,300	2,890	520	90	25	15
2							2,240	2,890	520	90	25	15
3							2,240	2,890	520	90	20	15
4							2,620	2,820	520	70	20	15
5							2,890	2,550	455	70	20	15
6							3,170	2,550	455	70	20	15
7							3,310	2,420	400	55	20	15
8							3,310	2,300	350	55	20	15
9							3,450	2,180	305	45	20	15
10							3,450	2,180	305	45	15	15
11							2,960	2,300	260	45	15	15
12							2,620	2,060	220	45	15	15
13							2,820	1,950	185	35	15	15
14							2,620	1,730	185	35	15	15
15							2,480	1,510	185	35	15	15
16							2,300	1,310	185	35	15	15
17							2,180	1,210	165	35	15	15
18							2,240	1,160	165	35	15	15
19							2,360	1,110	170	35	15	15
20						4,440	2,550	1,110	150	30	15	15
21						3,740	2,620	1,110	150	25	15	15
22						3,100	2,750	1,060	150	25	15	15
23						3,240	2,960	1,020	150	25	15	15
24						3,520	3,100	880	150	25	15	15
25						3,380	3,100	835	150	25	15	15
26						2,820	2,960	835	150	25	15	15
27						2,420	2,960	835	150	25	15	15
28						2,180	2,890	745	120	25	15	15
27						1,840	2,820	745	120	25	15	15
30						1,840	2,820	665	120	25	15	15
31						2,420		590		25	15	
1890-91.												
1	15	70	115	70	80	325	665	325	100	35	20	25
2	15	70	115	90	80	1,460	630	260	90	40	20	22
3	15	80	115	90	80	1,210	630	260	100	35	25	22
4	15	80	115	90	80	745	520	280	90	35	25	20
5	35	80	115	90	80	520	520	250	80	35	25	20
6	35	90	115	90	80	325	455	330	70	35	30	20
7	35	90	90	115	80	305	520	280	70	32	30	20
8	35	90	90	115	80	260	555	220	60	32	30	22
9	35	90	90	115	80	350	455	240	60	32	30	22
10	35	100	90	115	80	970	375	240	185	35	28	25
11	35	100	90	100	80	1,460	350	220	150	40	28	25
12	35	100	90	100	80	885	350	220	130	35	25	25
13	35	115	90	100	80	520	425	185	90	35	25	25
14	45	115	80	90	80	455	455	200	90	32	25	25
15	45	115	80	90	220	455	520	220	90	32	25	25
16	55	115	80	90	220	590	630	240	80	30	25	25
17	55	115	80	90	185	665	630	220	80	30	25	25
18	55	115	80	90	185	745	665	240	70	30	25	25
19	55	150	70	80	150	630	665	220	70	30	25	25
20	55	150	70	80	150	590	590	200	60	28	28	22
21	55	150	70	80	150	630	555	170	60	28	28	22
22	55	150	70	70	150	630	520	170	60	28	28	22
23	55	150	62	70	2,820	630	555	150	55	28	28	20
24	55	150	62	70	1,310	665	520	150	50	28	28	20
25	55	150	62	70	1,020	590	455	170	50	25	28	20
26	55	150	62	70	520	665	520	150	70	25	25	20
27	55	150	62	70	400	835	455	130	50	22	25	22
28	62	150	70	80	325	1,020	425	130	50	22	25	22
29	62	150	70	80		1,020	400	115	45	20	25	22
30	62	115	70	80		880	325	115	45	20	25	20
31	62		70	80		835		115		20	25	

Discharge, in second-feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1.....				148	148	360	540	485	240	26	9	11
2.....				165	148	330	675	460	240	31	9	11
3.....				185	185	300	930	435	260	17	10	11
4.....				205	185	275	815	410	240	17	10	11
5.....				228	228	275	675	410	200	14	10	11
6.....				300	228	275	675	435	170	10	9	11
7.....				300	205	275	510	485	170	17	9	11
8.....				300	228	300	425	510	155	17	9	11
9.....				250	228	228	425	485	170	17	10	11
10.....				228	228	360	540	460	155	17	10	11
11.....				228	228	480	675	435	140	17	10	48
12.....				250	165	660	710	385	140	17	10	61
13.....				250	205	690	745	320	140	17	10	77
14.....				228	228	540	675	300	140	10	9	105
15.....				275	228	360	710	320	140	10	9	115
16.....				275	228	185	675	260	140	10	10	155
17.....				275	205	330	675	280	115	10	10	155
18.....				228	228	275	675	280	105	10	10	140
19.....				228	250	330	780	280	86	4	9	140
20.....				205	228	275	710	240	69	4	9	128
21.....				228	250	330	640	240	54	4	10	115
22.....				228	480	330	675	260	48	9	10	115
23.....				205	825	330	675	240	48	9	10	115
24.....				205	860	330	710	260	48	9	10	140
25.....				275	895	450	540	240	48	9	10	140
26.....				205	720	825	510	240	48	9	10	115
27.....				130	480	1,160	510	220	48	9	10	140
28.....				148	480	1,600	510	200	42	9	10	140
29.....				148	.....	1,750	485	280	36	10	11	140
30.....				148	.....	1,900	460	300	26	9	11	128
31.....				148	.....	605	.....	240	.....	9	11	.....
1895-96.												
1.....	115	140	200	200	450	.....	.....	720	1,800	455	65	170
2.....	115	140	200	220	510	.....	.....	720	1,850	410	58	135
3.....	115	140	170	240	540	.....	.....	755	2,000	390	50	95
4.....	115	140	170	280	480	.....	.....	790	2,000	370	50	80
5.....	115	140	185	280	480	.....	.....	1,360	1,950	330	50	80
6.....	115	140	200	280	420	.....	.....	2,430	1,800	310	45	80
7.....	115	140	200	260	420	.....	.....	2,160	1,750	310	35	80
8.....	140	140	170	280	360	.....	.....	1,550	1,750	295	30	80
9.....	128	140	170	260	330	.....	.....	1,360	1,600	265	30	80
10.....	115	170	200	260	275	.....	.....	1,320	1,550	250	31	80
11.....	115	170	200	200	250	.....	.....	1,240	1,410	235	32	80
12.....	115	170	200	200	205	.....	.....	1,240	1,280	220	32	80
13.....	115	170	200	200	165	.....	.....	1,280	1,240	235	31	80
14.....	115	170	200	200	165	.....	.....	1,200	1,160	250	31	80
15.....	115	170	200	200	165	.....	.....	1,040	1,080	265	31	80
16.....	140	170	170	220	165	.....	.....	930	1,080	250	30	80
17.....	128	170	170	2,820	165	.....	.....	930	1,080	250	30	80
18.....	115	170	170	.....	185	.....	.....	930	1,000	182	30	80
19.....	115	170	200	.....	205	.....	.....	930	965	170	30	80
20.....	128	170	240	.....	205	.....	.....	860	1,000	145	30	88
21.....	140	220	200	.....	165	.....	.....	825	965	145	30	95
22.....	140	280	200	.....	148	.....	.....	790	930	135	30	95
23.....	140	260	185	.....	185	.....	.....	790	900	125	30	95
24.....	140	260	200	.....	250	.....	.....	895	840	125	30	95
25.....	140	200	200	860	300	.....	.....	1,120	780	110	29	95
26.....	140	170	200	790	228	.....	660	1,280	1,000	110	28	95
27.....	140	185	220	660	250	.....	720	1,410	965	102	28	102
28.....	140	200	280	570	300	.....	720	1,500	605	95	30	102
29.....	140	200	280	480	690	.....	720	1,600	555	88	30	102
30.....	140	200	240	450	.....	.....	720	1,700	505	80	30	102
31.....	140	.....	200	510	.....	.....	.....	1,700	.....	65	350	.....

Discharge, in second-feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.			Apr.	May.	June.	Day.			Apr.	May.	June.
1897.						1897.					
1.				3,520	1,050	16.			4,360	1,920	260
2.				3,520	890	17.			5,010	2,020	240
3.				3,520	815	18.			6,480	2,240	220
4.				3,340	675	19.			7,440	2,130	220
5.				3,340	570	20.			7,970	2,130	260
6.				3,280	640	21.			9,170	2,080	232
7.				3,460	540	22.			6,770	1,820	220
8.				3,520	510	23.			5,640	1,720	220
9.				3,160	450	24.			4,940	1,670	220
10.				2,680	480	25.			4,160	1,620	212
11.				2,400	375	26.			3,960	1,570	425
12.				2,300	325	27.			4,220	1,570	340
13.				2,180	280	28.			4,680	1,570	325
14.				2,020	260	29.			4,810	1,380	300
15.			4,100	1,920	260	30.			4,160	1,210	280
					260	31.				1,090	.....

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.		220	60	28	42	16.		248	72	11	42
2.		248	60	28	42	17.		234	72	11	42
3.		276	60	28	42	18.		207	72	11	42
4.		304	60	28	42	19.		194	72	11	42
5.		332	60	28	42	20.	360	181	72	11	42
6.		332	60	25	42	21.		360	144	72	11
7.		304	55	22	42	22.		318	144	72	11
8.		290	50	22	42	23.		304	133	60	11
9.		262	50	22	42	24.		304	123	50	11
10.		248	50	22	42	25.		276	123	42	11
11.		248	60	19	42	26.		248	103	42	16
12.		220	66	13	42	27.		234	86	42	16
13.		220	72	11	42	28.		220	78	42	22
14.		220	72	11	42	29.		220	66	42	31
15.		248	72	11	42	30.		220	60	38	34
						31.		220		31	42

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.	42	103	220	159	371	2,450	3,470	4,280	917	159	53	47
2.	46	103	220	107	350	2,450	3,020	3,870	877	159	57	40
3.	50	103	207	133	250	2,020	5,150	3,630	877	159	57	40
4.	50	103	194	159	172	1,400	4,450	3,320	877	159	40	40
5.	60	103	194	159	159	2,510	4,890	3,100	877	159	57	40
6.	60	103	194	146	159	3,170	4,800	2,950	800	133	47	40
7.	60	103	168	172	159	5,800	4,360	2,590	800	133	40	40
8.	72	103	262	200	133	8,610	4,080	2,380	800	329	40	40
9.	72	103	220	250	107	9,270	3,950	2,180	729	232	40	40
10.	72	123	207	200	159	6,640	4,620	2,180	729	159	57	40
11.	72	133	194	186	215	4,110	5,150	2,050	660	186	57	40
12.	86	123	168	186	269	3,470	6,260	2,050	660	215	57	40
13.	86	133	168	186	250	2,590	6,830	1,980	595	215	57	40
14.	86	144	181	186	186	2,380	7,200	1,920	564	200	57	40
15.	86	168	168	200	232	2,520	7,960	1,800	534	159	57	40
16.	86	168	168	232	4,700	2,660	7,960	1,800	475	159	57	40
17.	86	168	168	288	2,900	2,380	7,390	1,740	419	159	57	40
18.	94	168	168	308	2,700	3,400	6,730	1,680	371	146	57	40
19.	103	168	168	288	1,400	4,030	6,260	1,620	371	133	57	40
20.	103	144	168	250	1,000	4,620	7,770	1,570	350	107	57	40
21.	103	144	168	215	800	4,420	8,610	1,450	329	107	57	40
22.	103	168	144	232	10,300	2,730	9,270	1,340	329	107	57	47
23.	103	248	144	269	4,800	2,520	7,020	1,340	329	107	47	47
24.	103	458	144	288	6,100	2,050	5,790	1,400	288	107	47	57
25.	103	458	168	288	11,500	1,660	5,150	1,450	288	81	47	69
26.	103	444	144	371	6,200	1,450	4,712	1,450	269	94	47	81
27.	103	402	133	371	4,200	1,580	4,200	1,290	250	86	47	107
28.	103	346	133	329	3,021	1,680	4,540	1,240	215	81	57	94
29.	103	290	123	308	2,310	3,320	4,800	1,190	215	77	57	81
30.	103	248	133	288	.....	4,710	4,540	1,040	186	61	47	81
31.	103	.....	181	350	.....	4,450	.....	958	.....	61	47	.....

Discharge, in second-feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	
1904-5.													
1.....	81	159	200	132	386	1,520	1,090	452	239	88	20	14	
2.....	81	159	191	258	318	1,070	1,170	436	247	98	22	15	
3.....	81	159	172	204	318	1,720	1,380	436	214	98	18	16	
4.....	81	159	133	277	318	1,670	1,520	372	239	78	18	18	
5.....	86	159	180	239	277	1,780	1,340	349	340	78	15	18	
6.....	94	172	133	204	277	1,570	1,060	331	298	78	18	18	
7.....	107	172	159	204	277	1,780	1,010	285	318	60	17	18	
8.....	215	172	180	204	258	1,720	1,280	277	490	60	14	20	
9.....	133	172	172	145	239	1,430	1,290	250	462	40	12	22	
10.....	133	172	159	98	239	1,380	1,150	239	446	34	17	22	
11.....	133	186	172	109	222	1,480	1,140	211	462	30	14	25	
12.....	133	172	200	109	239	1,890	1,050	204	396	24	17	28	
13.....	159	172	200	109	159	2,240	940	204	340	20	16	28	
14.....	159	172	215	132	204	2,490	940	204	277	18	12	29	
15.....	159	172	200	88	239	2,300	890	188	250	18	12	28	
16.....	159	172	133	120	258	1,780	814	173	211	28	7	29	
17.....	159	172	215	188	222	1,620	733	153	204	26	12	34	
18.....	186	186	215	575	188	1,520	700	120	188	30	12	38	
19.....	186	186	215	386	173	1,570	766	120	258	37	13	41	
20.....	159	186	215	575	222	1,520	700	120	173	37	16	43	
21.....	159	186	200	546	239	1,830	700	120	151	30	16	44	
22.....	159	186	159	436	1,010	1,780	700	132	132	30	17	44	
23.....	172	186	172	706	1,200	1,520	624	135	120	24	17	47	
24.....	159	200	200	3,100	2,060	1,480	618	120	109	24	18	50	
25.....	159	200	159	1,800	2,420	1,430	605	120	109	24	19	47	
26.....	159	209	186	1,170	2,240	1,360	575	120	109	20	17	47	
27.....	159	215	186	911	2,000	1,280	534	159	98	18	15	50	
28.....	164	215	215	800	1,670	1,220	546	277	204	18	16	50	
29.....	159	215	172	700	-----	1,250	558	269	88	18	15	47	
30.....	159	215	172	575	-----	1,190	506	410	159	20	16	48	
31.....	159	-----	350	490	-----	1,090	-----	298	-----	22	15	-----	
1905-6.													
1.....	44	109	140	192	184	630	12,800	1,510	1,510	160	17	14	
2.....	46	90	118	120	178	460	8,300	1,410	1,090	148	14	14	
3.....	50	94	142	115	164	365	5,740	1,360	888	125	14	15	
4.....	54	98	182	195	160	350	5,320	1,290	810	115	12	15	
5.....	54	100	176	227	164	345	5,290	1,210	866	110	10	17	
6.....	57	111	159	174	307	397	5,830	1,150	1,090	105	10	22	
7.....	57	107	165	231	235	414	6,740	1,100	1,000	91	8.6	20	
8.....	54	111	173	142	167	714	6,900	1,000	1,070	78	8.6	21	
9.....	54	113	88	120	207	1,030	7,260	910	992	74	8.2	22	
10.....	57	111	162	125	151	1,280	6,780	852	859	67	7.4	20	
11.....	54	120	148	128	151	1,500	5,800	817	782	55	7.4	21	
12.....	60	111	60	130	154	1,250	4,510	888	727	47	9.0	22	
13.....	60	116	43	130	164	852	3,970	895	636	42	7.0	21	
14.....	60	100	64	136	181	598	3,680	824	598	35	6.6	21	
15.....	60	118	130	154	199	701	3,860	740	550	31	7.0	24	
16.....	74	120	109	130	231	656	3,930	727	514	25	7.0	27	
17.....	80	122	120	188	244	316	4,100	688	478	21	7.0	27	
18.....	92	135	140	142	244	258	3,990	649	414	21	6.6	28	
19.....	90	120	145	145	253	258	3,590	586	386	22	5.4	33	
20.....	98	130	162	188	375	355	3,180	514	350	20	5.0	32	
21.....	102	130	195	253	662	355	3,080	478	316	20	5.0	33	
22.....	98	125	327	181	630	375	3,050	430	280	11	5.0	35	
23.....	94	116	285	181	817	544	3,000	392	248	12	4.0	33	
24.....	98	94	145	174	616	2,130	2,800	365	211	5	5.0	33	
25.....	102	116	179	170	623	5,090	2,680	335	188	13	5.8	33	
26.....	98	135	148	302	430	5,260	2,570	316	188	11	8.2	32	
27.....	105	148	138	203	386	5,330	2,390	298	164	14	9.0	35	
28.....	107	156	254	219	430	5,740	2,110	375	151	21	9.5	34	
29.....	116	153	204	223	-----	5,220	1,740	586	136	21	11	33	
30.....	107	156	156	203	-----	6,410	1,580	-----	1,940	167	21	9.5	34
31.....	107	-----	148	188	-----	10,200	-----	2,080	-----	21	14	-----	

Discharge, in second-feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.							1906-7.						
1.....	37	67	87	154	2,220	1,130	16.....	43	97	130	160	1,090	740
2.....	37	71	87	142	1,840	1,050	17.....	44	97	118	151	1,070	2,370
3.....	40	72	81	148	932	992	19.....	44	95	122	145	1,090	3,360
4.....	42	74	78	154	4,840	888	19.....	46	93	136	142	1,030	5,320
5.....	43	81	80	207	10,600	852	20.....	48	108	130	133	955	6,590
6.....	42	83	81	195	7,770	796	21.....	48	110	122	142	970	5,010
7.....	44	89	89	203	5,150	852	22.....	54	99	142	148	1,040	3,990
8.....	44	89	110	211	2,940	1,050	23.....	64	85	133	154	1,050	3,480
9.....	43	93	136	215	2,070	985	24.....	67	71	136	154	1,170	2,990
10.....	42	101	133	231	1,630	955	25.....	71	64	136	151	1,130	2,500
11.....	43	93	136	219	1,520	940	26.....	74	71	136	154	1,320	2,280
12.....	44	93	133	191	1,410	948	27.....	69	85	148	151	1,700	2,040
13.....	44	91	139	167	1,220	895	28.....	67	120	227	154	1,330	1,810
14.....	39	91	136	167	1,130	824	29.....	67	110	320	203	.....	1,590
15.....	42	95	142	167	1,090	768	30.....	66	91	271	1,810	.....	1,400
							31.....	67	.....	235	2,170	.....	1,380

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1908.						1908.					
1.....		156	138	51	60	16.....		185	78	46	60
2.....		160	121	49	59	17.....		180	61	44	60
3.....		172	117	47	57	18.....		172	63	44	61
4.....		180	113	46	59	19.....		160	59	46	72
5.....		180	108	47	59	20.....		165	57	46	74
6.....		182	121	46	59	21.....		185	55	44	72
7.....		172	99	44	61	22.....		199	55	42	78
8.....		170	90	44	61	23.....		199	50	51	80
9.....		170	92	43	59	24.....		213	55	51	78
10.....		160	84	41	59	25.....		207	51	53	78
11.....		185	68	40	60	26.....		199	55	53	67
12.....		191	65	41	60	27.....		170	55	53	68
13.....		191	68	41	59	28.....		142	57	53	68
14.....		185	63	44	57	29.....	156	156	59	53	68
15.....		180	128	47	59	30.....	151	142	55	53	69
						31.....	156	.....	47	54	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	84	130	78	119	520	610	1,130	628	412	118	34	29
2.....	96	128	172	123	520	1,010	1,170	580	412	78	34	29
3.....	74	128	108	82	532	1,130	1,210	544	424	73	33	654
4.....	78	134	140	78	520	1,170	1,380	514	424	67	34	526
5.....	78	117	145	71	526	1,190	1,250	472	508	64	32	448
6.....	78	128	145	68	520	1,150	1,170	448	550	61	32	285
7.....	74	128	149	68	580	970	1,070	448	520	61	31	250
8.....	77	117	149	1,220	508	794	930	436	490	60	31	112
9.....	76	113	153	1,400	430	675	822	460	460	56	30	83
10.....	77	110	168	1,400	375	640	829	424	436	51	29	74
11.....	77	108	165	1,320	568	610	970	418	400	72	29	67
12.....	77	106	160	420	640	520	970	418	400	64	30	60
13.....	78	121	156	420	647	496	994	380	375	64	29	60
14.....	82	123	142	410	1,330	562	1,050	360	360	61	31	83
15.....	84	121	108	410	1,340	710	1,050	335	300	60	29	78
16.....	103	123	83	7,970	1,140	970	1,120	320	270	60	30	74
17.....	117	130	78	6,500	3,460	1,330	1,120	290	241	59	31	76
18.....	128	128	82	4,820	2,620	1,170	1,150	260	228	58	31	74
19.....	130	130	84	4,820	1,950	970	1,110	214	228	58	29	74
20.....	128	132	84	4,880	1,570	1,130	1,070	223	345	58	29	74
21.....	128	134	84	4,300	1,070	954	1,030	228	280	58	29	72
22.....	125	140	82	4,040	850	890	914	223	246	56	28	74
23.....	121	147	87	2,740	794	745	836	236	241	55	28	78
24.....	113	151	87	2,380	724	745	822	250	228	49	28	74
25.....	108	156	90	1,110	640	794	822	241	198	48	26	74
26.....	108	145	99	850	640	866	654	260	177	48	28	74
27.....	113	138	106	759	628	970	640	270	145	44	28	78
28.....	113	113	106	738	610	1,110	640	290	132	43	28	79
29.....	112	110	112	604	.....	1,250	640	345	123	43	28	83
30.....	128	99	112	375	.....	1,350	661	345	128	41	28	83
31.....	130	.....	119	532	.....	1,550	.....	360	.....	42	28	.....

Discharge, in second-feet, of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.	88	118	310	205	520	6,650	1,420	780	14	24		
2.	88	118	390	205	520	19,000	1,460	745	14			
3.	95	120	390		490		1,510	745	7		14	
4.	92	118	395		400		1,510	675	7			
5.	92	123	335		325		1,290	610	14			
6.	88	123	300		325		1,330	610	24			
7.	83	128	300		325		1,330	640	24			
8.	78	128	246		325		1,330	610	24			
9.	72	132	164		350		1,420	580	24			
10.	67	132	135		350		1,420	550	24			
11.	70	135	118		350		1,420	325	24	24		24
12.	79	142	78		350		1,510	325	18			
13.	86	148	78		375		1,380	300	18			
14.	92	142	73		375		1,380	250	18			
15.	92	142	72		400		1,290	228	24			
16.	92	148	73		1,700		1,170	228	24			
17.	92	137	72		780		1,090	205	24			
18.	92	137	67		205		1,090	205	24			29
19.	92	128	67		40		1,090	170	24			29
20.	88	128	79		170		1,090	155	24			29
21.	97	164			250		1,090	140	24		18	29
22.	97	164			460		1,090	126	29			29
23.	95	177			640		1,050	78	29			29
24.	97	350		275	710		1,050	78	29			29
25.	97	460		275	1,330		1,010	66	29			29
26.	101	472		275	2,550		970	56	24			29
27.	101	365		350	5,290		850	45	24			29
28.	105	290		350	9,580		850	45	24			24
29.	108	260		375			850	24	24			37
30.	108	285		520			850	29	24	14		45
31.	114			520				24				

NOTE.—Daily discharge determined as follows:

1890 and 1891. From rating curve well defined between 100 and 4,000 second-feet.

1895 to 1897. Jan. 1 to Mar. 30, 1895, and Jan. 25 to June 20, 1896, from fairly well-defined curve; Mar. 31 to Apr. 26, 1895, and Apr. 15 to June 30, 1897, from curve well defined above 1,000 second-feet; Apr. 27 to June 23, 1895, by indirect method for shifting channels; June 24 to Dec. 29, 1895, from curve fairly well defined between 10 and 300 second-feet; June 21 to Sept. 30, 1896, from fairly well-defined curve.

1903. From fairly well defined rating curve.

1904. Jan. 1 to Feb. 15 and Feb. 27 to Dec. 31, from fairly well defined rating curve; Feb. 16-26, by indirect method for shifting channels.

1905. Indirect method for shifting channels used.

1906 and 1907. From curve well defined between 200 and 8,000 second-feet.

1908 and 1909. May 29, 1908, to Jan. 15, 1909, from poorly defined curve; Jan. 16 to Dec. 31, 1909, from curve fairly well defined between 100 and 8,000 second-feet.

1910. From rating curve well defined between 25 and 150 second-feet and fairly well defined by earlier measurements between 150 and 8,000 second-feet; above 170 second-feet discharge the curve coincides with that used for 1909. Estimate of daily discharge March 3-31, 1910, withheld on account of uncertainty of discharge relation.

Discharge estimated, on account of ice, during short periods in the winter months.

Monthly discharge of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1890.					
March 20-31.....	4,440	1,840	2,910	69,300	B.
April.....	3,450	2,180	2,770	165,000	B.
May.....	2,890	590	1,630	100,000	B.
June.....	520	120	254	15,100	B.
July.....	90	25	43	2,640	B.
August.....	25	15	17	1,050	C.
September.....	15	15	15	893	C.
The period.....				354,000	
1890-91.					
October.....	62	15	44	2,710	B.
November.....	150	70	118	7,020	B.
December.....	115	62	83	5,100	B.
January.....	115	70	88	5,410	C.
February.....	2,820	80	319	17,700	C.
March.....	1,460	260	708	43,200	C.
April.....	665	325	511	30,400	C.
May.....	325	115	217	13,300	C.
June.....	185	45	78	4,640	C.
July.....	40	20	30	1,840	C.
August.....	30	20	26	1,600	C.
September.....	25	20	22	1,310	C.
The year.....	2,820	15	187	134,000	
1895.					
January.....	300	130	220	13,500	B.
February.....	895	148	328	18,200	B.
March.....	1,900	185	539	33,100	C.
April.....	930	425	632	37,600	C.
May.....	510	200	335	20,600	D.
June.....	260	26	122	7,260	D.
July.....	31	4	12.5	769	C.
August.....	11	9	9.8	603	C.
September.....	155	11	84.1	5,000	C.
The period.....				137,000	
1895-96.					
October.....	140	115	127	7,810	C.
November.....	280	140	177	10,500	C.
December.....	230	170	201	12,400	C.
January.....	2,820	200	^a 763	46,900	D.
February.....	690	148	298	17,100	B.
March.....			^b 801	49,300	D.
April.....			^b 761	45,300	D.
May.....	2,430	720	1,200	73,800	B.
June.....	2,000	505	1,250	74,400	B.
July.....	455	65	218	13,400	B.
August.....	350	28	45.0	2,770	B.
September.....	170	80	91.5	5,440	B.
The year.....	2,820	28	495	359,000	
1897.					
April 15-30.....	9,170	3,960	5,490	174,000	B.
May.....	3,520	1,090	2,320	143,000	B.
June.....	1,050	212	403	24,000	C.
1903.					
May 20-31.....	360	220	274	6,520	B.
June.....	332	60	203	12,100	B.
July.....	72	31	58	3,570	B.
August.....	42	11	19	1,170	B.
September.....	42	42	42	2,500	B.
The period.....				25,900	

^a Daily discharge interpolated Jan. 18-24, 1896.

^b Daily discharge for Mar. 1 to Apr. 25, 1896, estimated from comparison with Weiser River.

Monthly discharge of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October.....	103	42	84	5,160	B.
November.....	458	103	192	11,400	B.
December.....	262	123	175	10,800	B.
January.....	371	107	236	14,500	C.
February.....	11,500	107	2,240	129,000	C.
March.....	9,270	1,450	3,460	213,000	B.
April.....	9,270	3,020	5,700	339,000	B.
May.....	4,280	958	2,030	125,000	B.
June.....	917	186	533	31,700	B.
July.....	329	61	146	8,080	B.
August.....	57	40	52.1	3,200	B.
September.....	107	40	50.4	3,000	B.
The year.....	11,500	40	1,240	895,000	
1904-5.					
October.....	215	81	144	8,850	B.
November.....	215	159	182	10,800	B.
December.....	350	133	188	11,600	B.
January.....	3,100	88	503	30,900	B.
February.....	2,420	159	642	35,700	A.
March.....	2,490	1,090	1,620	99,400	A.
April.....	1,520	506	898	53,400	A.
May.....	452	120	235	14,400	A.
June.....	490	88	244	14,500	A.
July.....	98	18	39.6	2,440	B.
August.....	22	7	15.6	959	B.
September.....	50	14	32.6	1,940	B.
The year.....	3,100	7	395	285,000	
1905-6.					
October.....	116	44	77.1	4,740	B.
November.....	156	90	119	7,080	B.
December.....	327	43	155	9,530	B.
January.....	302	115	174	10,700	B.
February.....	817	151	311	17,300	A.
March.....	10,200	258	1,920	118,000	A.
April.....	12,800	1,580	4,550	271,000	A.
May.....	2,080	298	862	53,000	A.
June.....	1,510	136	589	35,000	A.
July.....	160	5	49.7	3,060	C.
August.....	17	4	8.6	529	D.
September.....	35	14	25.7	1,530	C.
The year.....	12,800	4	737	531,000	
1906-7.					
October.....	74	37	50.5	3,110	B.
November.....	120	64	89.3	5,310	C.
December.....	320	78	138	8,480	C.
January.....	2,170	133	287	17,600	B.
February.....	10,600	932	2,190	122,000	A.
March.....	6,590	740	1,960	121,000	A.
The period.....				278,000	
1908.					
June.....	213	142	177	10,500	B.
July.....	138	47	77	4,730	B.
August.....	54	40	47	2,890	C.
September.....	80	57	64.7	3,850	C.
The period.....				22,000	

Monthly discharge of Malheur River at Vale, Oreg., for 1890-91, 1895-1897, and 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	130	74	99.8	6,140	B.
November.....	156	99	126	7,500	B.
December.....	168	78	117	7,190	C.
January.....	7,970	68	1,780	109,000	B.
February.....	3,460	375	938	52,100	B.
March.....	1,350	496	924	56,800	B.
April.....	1,380	640	974	58,000	B.
May.....	628	214	362	22,300	B.
June.....	550	123	323	19,200	B.
July.....	118	41	59	3,630	C.
August.....	34	26	29.8	1,830	C.
September.....	654	29	133	7,910	B.
The year.....	7,970	26	488	352,000	
1909-10.					
October.....	114	67	91.5	5,630	B.
November.....	472	118	187	11,100	B.
December.....	395	67	a 146	8,980	C.
January.....	520	205	a 277	17,000	C.
February.....	9,580	40	1,050	58,300	B.
March.....	19,000	.....	a 6,070	373,000	D.
April.....	1,510	850	1,210	72,000	B.
May.....	780	24	311	19,100	B.
June.....	29	7	21.9	1,300	C.
July.....	.....	.....	a 20.6	1,270	C.
August.....	.....	.....	a 17.0	1,050	C.
September.....	45	.....	a 26.6	1,580	B.
The year.....	19,000	.....	786	570,000	

a Estimated.

MALHEUR RIVER AT HALLIDAY'S BRIDGE, NEAR ONTARIO, OREG.

Location.—In sec. 13, T. 18 S., R. 45 E., at county bridge known as Halliday's bridge, 10 miles above Ontario on the road to Vale, 5 miles below mouth of Willow Creek.

Records presented.—December 8, 1904, to July 31, 1905.

Drainage area.—5,620 square miles.

Gage.—Standard chain.

Channel.—Gravel and sand; shifting.

Discharge measurements.—Made from highway bridge.

Winter flow.—No record of any ice.

Diversions.—Below all ditches except Brosnan.

Accuracy.—Records fair.

Discharge measurements of Malheur River at Halliday's bridge, near Ontario, Oreg., in 1904-5.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Feb. 23	J. H. Lewis.....	12.2	8,370	Mar. 1	J. M. Griffin.....	4.80	1,480
Dec. 7	W. C. Sawyer.....	2.05	76	25	W. C. Sawyer.....	4.74	1,400
				27	.....do.....	4.41	1,100
1905.				Apr. 11	Smith and Griffin.....	4.36	1,010
Jan. 25	E. N. Smith.....	5.16	1,640	May 3	.....do.....	3.20	432
26	Smith and Johnson.....	4.96	1,510	June 21	E. N. Smith.....	2.15	89
30	Sawyer and Griffin.....	3.60	460	Nov. 10	R. S. Hall.....	2.20	110
Feb. 24	J. M. Griffin.....	5.55	2,060	Dec. 29	.....do.....	2.29	75

Daily gage height, in feet, of Malheur River at Halliday's bridge, near Ontario, Oreg., for 1904-5.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1		2.7	3.2	4.85	4.15	3.3	2.38	1.67
2		2.7	3.1	4.95	4.22	3.27	2.25	1.67
3		2.8	3.0	4.95	4.58	3.2	2.2	1.58
4		2.85	2.9	4.9	4.77	3.1	2.27	1.62
5		2.8	2.9	5.1	4.53	3.1	2.55	1.5
6		2.6	2.8	5.15	4.27	3.08	2.55	1.5
7		2.6	2.7	5.2	4.18	2.97	2.65	1.45
8		2.5	2.35	5.1	4.25	2.93	2.8	1.5
9		2.5	2.3	2.7	4.95	4.32	2.85	1.5
10		2.3	2.35	2.5	4.85	4.35	2.55	1.4
11		2.25	2.35	2.4	5.0	4.37	2.45	1.4
12		2.4	2.3	2.8	5.25	4.23	2.43	1.3
13		2.45	2.35	2.5	5.4	4.12	2.4	1.3
14		2.5	2.35	2.65	-----	4.05	2.35	1.4
15		2.5	2.35	2.7	-----	4.0	2.35	1.4
16		2.3	2.5	2.8	5.0	3.83	2.3	1.4
17		2.4	2.45	2.7	4.85	3.8	2.25	1.4
18		2.9	3.85	2.7	4.85	3.75	2.17	1.4
19		2.7	3.85	2.7	4.75	3.75	2.22	1.4
20		2.6	4.5	2.8	4.85	3.75	2.0	1.28
21		2.5	4.3	3.25	5.15	3.75	1.95	1.35
22		2.4	3.85	4.75	5.2	3.7	1.9	1.35
23		2.4	5.0	5.15	5.0	3.65	1.93	1.4
24		2.5	7.15	5.65	4.85	3.6	1.9	1.85
25		2.4	5.9	5.85	4.7	3.55	1.87	1.4
26		2.1	4.8	5.6	4.6	3.48	1.85	1.38
27		2.15	4.35	5.35	4.4	3.45	2.08	1.77
28		2.3	3.95	5.05	4.35	3.47	2.47	1.68
29		2.25	3.6	-----	4.25	3.52	2.5	1.67
30		2.4	3.4	-----	4.2	3.38	2.33	1.73
31		3.0	3.3	-----	4.2	-----	2.27	1.4

NOTE.—No ice record.

Daily discharge, in second-feet, of Malheur River at Halliday's bridge, near Ontario, Oreg., for 1904-5.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1		226	399	1,450	919	439	140	33
2		226	361	1,540	968	427	113	33
3		257	325	1,540	1,240	399	104	24
4		273	290	1,500	1,390	361	117	28
5		257	290	1,660	1,200	361	183	17
6		197	257	1,700	1,000	354	211	17
7		197	226	1,750	940	314	211	13
8		170	133	1,660	989	300	257	17
9		170	123	226	1,540	1,040	273	325
10		123	133	170	1,450	1,060	183	512
11		113	133	145	1,580	1,080	157	314
12		145	123	257	1,790	975	152	273
13		157	133	170	1,920	899	145	226
14		170	133	211	1,840	851	133	183
15		170	133	226	1,660	817	133	145
16		123	170	257	1,580	708	123	123
17		145	157	226	1,450	689	113	113
18		290	720	226	1,450	659	99	113
19		226	720	226	1,370	659	108	170
20		197	1,170	257	1,450	659	72	99
21		170	1,020	419	1,700	659	65	87
22		145	720	1,370	1,750	630	59	76
23		145	1,580	1,700	1,580	602	63	61
24		170	3,580	2,160	1,450	575	59	53
25		145	2,400	2,350	1,330	549	55	53
26		87	1,410	2,110	1,250	516	53	51
27		95	1,060	1,880	1,100	503	84	43
28		123	784	1,620	1,060	512	162	34
29		113	575	-----	989	535	170	33
30		145	481	-----	954	473	129	39
31		325	439	-----	954	-----	117	-----

NOTE.—Daily discharge determined from a rating curve fairly well defined between 60 and 2,200 second-feet.

Monthly discharge of Malheur River at Halliday's bridge, near Ontario, Oreg., for 1904-5.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
December 8-31.....	325	87	161	7,760	B.
January.....	3,580	123	635	39,000	C.
February.....	2,160	170	663	36,800	B.
March.....	1,920	954	1,480	91,200	B.
April.....	1,390	473	810	48,200	B.
May.....	439	53	183	11,200	B.
June.....	512	33	149	8,870	B.
July.....	33	0	11.6	713	D.
The period.....				244,000	

MALHEUR RIVER NEAR ONTARIO, OREG.

Location.—In sec. 29, T. 17 S., R. 47 E., at county bridge about 2½ miles northwest of Ontario and 1¼ miles above the mouth of the river.

Records presented.—December 8, 1903, to May 14, 1904.

Drainage area.—Not measured.

Gage.—Inclined staff.

Channel.—Sand and gravel; shifting.

Discharge measurements.—Made from bridge.

Winter flow.—Apparently unaffected by ice.

Diversions.—Nevada and Brosnan ditches divert water between this station and Vale; no diversions below.

Accuracy.—Results good until April 30, after which discharge relation was affected by backwater from Snake River.

Discharge measurements of Malheur River near Ontario, Oreg., in 1903-4.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903. Dec. 8	J. H. Lewis.....	<i>Fect.</i> 6.46	<i>Sec. ft.</i> 138	1904 Feb. 22	J. H. Lewis.....	<i>Fect.</i> 13.42	<i>Sec. ft.</i> 4,270
				22	.....do.....	14.35	5,270
1904. Feb. 22	J. H. Lewis.....	12.10	3,190	22	.....do.....	15.08	6,210
				Apr. 4	Lewis and Newell.....	13.25	5,000

Daily gage height, in feet, of Malheur River near Ontario, Oreg., for 1903-4.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
1.....		6.30	6.90	10.60	11.90	13.70	16.....	6.60	7.80	12.15	11.65	15.55	.....
2.....		6.30	7.00	10.90	12.50	13.45	17.....	6.60	8.50	16.60	11.45	15.35	.....
3.....		6.30	6.80	10.68	12.35	13.15	18.....	6.60	8.50	11.70	12.15	14.80	.....
4.....		6.20	6.90	10.28	12.40	13.00	19.....	6.60	7.50	9.60	12.45	14.50	.....
5.....		6.70	7.28	10.25	13.20	12.85	20.....	6.50	7.20	8.55	13.20	15.25	.....
6.....		6.60	7.48	10.60	13.75	12.75	21.....	6.50	7.20	8.35	13.20	16.45	.....
7.....		6.50	6.51	13.00	13.10	12.85	22.....	6.50	7.20	11.65	12.05	16.80	.....
8.....	6.42	6.50	6.52	15.95	13.70	12.55	23.....	6.40	7.30	17.40	11.20	15.40	.....
9.....	6.53	6.50	7.55	16.75	13.10	12.50	24.....	6.40	7.30	16.30	10.70	14.70	.....
10.....	6.53	6.50	6.32	15.45	13.10	12.45	25.....	6.40	7.00	17.45	10.15	14.50	.....
11.....	6.50	6.70	7.38	13.65	13.55	12.42	26.....	6.30	6.90	16.60	10.10	13.65	.....
12.....	6.50	6.80	7.45	12.60	14.15	12.35	27.....	6.30	6.80	14.30	10.30	13.65	.....
13.....	6.50	7.80	7.50	12.10	14.55	12.18	28.....	6.30	6.80	13.65	10.35	13.85	.....
14.....	6.50	7.80	6.92	11.40	14.95	12.20	29.....	6.30	6.70	11.10	11.00	13.20	.....
15.....	6.55	7.80	7.38	11.55	15.35	.....	30.....	6.30	6.90	.....	13.50	12.70	.....
							31.....	6.30	6.90	.....	13.15	.....	.....

Daily discharge, in second-feet, of Malheur River near Ontario, Oreg., for 1903-4.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Dec.	Jan.	Feb.	Mar.	Apr.
1.....		110	240	2,630	3,720	16.....	165	510	3,220	3,500	8,340
2.....		110	265	2,870	4,300	17.....	165	785	8,620	3,320	8,000
3.....		110	215	2,690	4,150	18.....	165	785	2,860	3,950	7,100
4.....		95	240	2,370	4,200	19.....	165	415	1,330	4,250	6,650
5.....		190	349	2,350	5,020	20.....	145	325	808	5,020	7,820
6.....		165	409	2,630	5,620	21.....	145	325	720	5,020	9,960
7.....		145	418	4,800	4,910	22.....	145	325	2,820	3,860	10,600
8.....	129	145	421	9,020	5,570	23.....	125	355	10,100	3,110	8,080
9.....	151	145	430	10,500	4,910	24.....	125	355	8,900	2,710	6,950
10.....	151	145	361	8,160	4,910	25.....	125	265	11,900	2,280	6,650
11.....	145	190	379	5,520	5,400	26.....	110	240	10,200	2,240	5,520
12.....	145	215	400	4,400	6,120	27.....	110	215	6,350	2,390	5,520
13.....	145	510	415	3,900	6,720	28.....	110	215	5,520	2,430	5,740
14.....	145	510	245	3,270	7,300	29.....	110	190	3,030	2,950	5,020
15.....	155	510	379	3,400	8,000	30.....	110	240	.....	5,350	4,500
						31.....	110	240	.....	4,960	.....

NOTE.—Daily discharge determined as follows: Dec. 8, 1903, to Feb. 23, 1904, and Feb. 25 to Apr. 30, 1904, from fairly well defined rating curves; discharge Feb. 24, estimated.

Monthly discharge of Malheur River near Ontario, Oreg., for 1903-4.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
December 8-31.....	165	110	137	6,520	B.
January.....	785	95	293	18,000	C.
February.....	11,900	215	2,810	162,000	B.
March.....	10,500	2,240	4,060	250,000	B.
April.....	10,600	3,720	6,240	371,000	C.
The period.....				808,000	

SOUTH FORK OF MALHEUR RIVER AT RIVERSIDE, OREG.

Location.—In sec. 27, T. 23 S., R. 37 E., about one-fourth mile from Riverside post office and 1,000 feet above junction with main stream.

Records presented.—May 25 to September 30, 1910.

Drainage area.—800 square miles.

Gage.—Vertical staff.

Channel.—Gravel and stones; slightly shifting.

Discharge measurements.—Made from cable or by wading.

Diversions.—Small amount of water is used for irrigation along South Fork.

Winter flow.—Some ice forms at the station during severe weather. Ice jams occasionally form above station and go out with a rush of ice and water.

Accuracy.—Conditions good; results fairly accurate except for periods of extreme low water.

The following discharge measurement was made by L. R. Allen:
May 25, 1910: Gage height, 1.60 feet; discharge, 11.2 second-feet.

Daily gage height, in feet, of South Fork of Malheur River at Riverside, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		1.5	1.3	1.5	1.6	16.....		1.5	1.3	1.4	1.6
2.....		1.5	1.3	1.45	1.6	17.....		1.45	1.35	1.4	1.6
3.....		1.5	1.3	1.5	1.6	18.....		1.4	1.35	1.4	1.6
4.....		1.55	1.3	1.5	1.6	19.....		1.45	1.35	1.4	1.6
5.....		1.55	1.3	1.5	1.55	20.....		1.45	1.4	1.4	1.6
6.....		1.6	1.3	1.45	1.5	21.....		1.45	1.4	1.4	1.65
7.....		1.6	1.3	1.45	1.5	22.....		1.5	1.4	1.4	1.6
8.....		1.55	1.3	1.55	1.5	23.....		1.4	1.4	1.45	1.6
9.....		1.4	1.3	1.4	1.5	24.....		1.4	1.4	1.45	1.6
10.....		1.3	1.3	1.4	1.45	25.....	1.6	1.4	1.4	1.45	1.6
11.....		1.3	1.3	1.4	1.45	26.....	1.6	1.3	1.4	1.5	1.6
12.....		1.45	1.3	1.45	1.45	27.....	1.6	1.3	1.4	1.5	1.6
13.....		1.5	1.3	1.4	1.5	28.....	1.6	1.3	1.45	1.45	1.6
14.....		1.5	1.3	1.4	1.5	29.....	1.6	1.3	1.45	1.4	1.6
15.....		1.5	1.3	1.4	1.5	30.....	1.6	1.35	1.5	1.4	1.6
						31.....	1.55		1.5	1.4	

Daily discharge, in second-feet, of South Fork of Malheur River at Riverside, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		5	2	5	9	16.....		5	2	3	9
2.....		5	2	4	9	17.....		4	2.5	3	9
3.....		5	2	5	9	18.....		3	2.5	3	9
4.....		7	2	5	9	19.....		4	2.5	3	9
5.....		7	2	5	7	20.....		4	3	3	9
6.....		9	2	4	5	21.....		4	3	3	12
7.....		9	2	4	5	22.....		5	3	3	9
8.....		7	2	7	5	23.....		3	3	4	9
9.....		3	2	3	5	24.....		3	3	4	9
10.....		2	2	3	4	25.....	9	3	3	4	9
11.....		2	2	3	4	26.....	9	2	3	5	9
12.....		4	2	4	4	27.....	9	2	3	5	9
13.....		5	2	3	5	28.....	9	2	4	4	9
14.....		5	2	3	5	29.....	9	2	4	3	9
15.....		5	2	3	5	30.....	9	2.5	5	3	9
						31.....	7		5	3	

NOTE.—Daily discharge determined from a discharge-rating curve well defined between 8 and 800 second-feet, and based on later measurements.

Monthly discharge of South Fork of Malheur River at Riverside, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
May 25-31.....	9	7	8.71	121	B.
June.....	9	2	4.28	255	C.
July.....	5	2	2.63	162	C.
August.....	7	3	3.77	232	C.
September.....	12	4	7.60	452	C.
The period.....				1,220	

NORTH FORK OF MALHEUR RIVER NEAR BEULAH, OREG.

Location.—In sec. 22, T. 20 S., R. 37 E., about 7 miles below Beulah, which is at the lower end of the Beulah or Agency Valley reservoir site.

Records presented.—March 21, 1909, to September 30, 1910.

Drainage area.—436 square miles.

Gage.—Vertical staff; chain gage 300 feet upstream was used prior to May 25, 1910.

Channel.—Stones and small bowlders; slightly shifting.

Discharge measurements.—Made from cable.

Winter flow.—Somewhat affected by ice. Flow may be checked for short periods by freezing in Agency Valley.

Diversions.—Small amount of water diverted for irrigation above station.

Accuracy.—Results good except for extreme high stages.

Discharge measurements of North Fork of Malheur River near Beulah, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
June 28	R. B. Post.....	2.30	98	Apr. 2	L. R. Allen.....	3.56	544
Nov. 19	.....do.....	1.96	49	May 26	.....do.....	^a 2.28	128

^a On new gage; old gage read 2.52 feet.

Daily gage height, in feet, of North Fork of Malheur River near Beulah, Ore., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....							2.95	2.8	2.76	2.15	1.9	1.9
2.....							3.0	2.75	2.8	2.1	1.9	1.9
3.....							3.0	2.75	2.9	2.1	1.9	1.9
4.....							2.95	2.85	3.0	2.05	1.85	2.35
5.....							2.9	2.85	3.0	2.05	1.85	2.0
6.....							2.85	2.85	3.0	2.05	1.85	2.15
7.....							2.85	2.88	2.95	2.05	1.85	2.1
8.....							2.85	2.85	2.9	2.05	1.8	2.1
9.....							2.8	2.8	2.8	2.05	1.8	2.05
10.....							2.8	2.8	2.75	2.05	1.82	2.05
11.....							2.85	2.8	2.75	2.0	1.8	2.05
12.....							2.8	2.78	2.65	2.0	1.75	2.0
13.....							2.8	2.7	2.6	2.0	1.75	2.0
14.....							2.95	2.7	2.6	2.0	1.8	2.0
15.....							2.95	2.7	2.6	2.0	1.8	1.98
16.....							3.0	2.65	2.6	2.0	1.85	1.98
17.....							3.0	2.65	2.6	1.95	1.88	1.98
18.....							3.0	2.65	2.6	1.9	1.9	1.95
19.....							2.95	2.65	2.6	1.9	1.9	1.95
20.....							2.9	2.6	2.65	1.9	1.85	1.95
21.....						2.6	2.85	2.6	2.6	1.8	1.9	1.96
22.....						2.55	2.85	2.6	2.55	1.8	1.9	1.95
23.....						2.6	2.83	2.6	2.55	1.8	1.9	1.95
24.....						2.8	2.85	2.6	2.55	1.8	1.9	2.0
25.....						2.85	2.7	2.6	2.45	1.85	1.9	2.0
26.....						2.95	2.7	2.6	2.35	1.85	1.9	2.0
27.....						3.0	2.8	2.7	2.3	1.85	1.9	2.05
28.....						3.1	2.85	2.75	2.3	1.85	1.9	2.05
29.....						3.3	2.85	2.85	2.3	1.85	1.9	2.05
30.....						3.0	2.8	2.8	2.25	1.95	1.9	2.05
31.....						2.9	.....	2.75	.....	1.95	1.9	.....
1909-10.												
1.....	2.0	2.1	2.2	2.25	2.15	4.8	3.55	3.3	2.1	1.75	1.6	1.6
2.....	2.0	2.1	2.15	2.3	2.1	5.1	3.6	3.25	2.1	1.75	1.6	1.65
3.....	2.0	2.1	1.95	2.35	1.95	4.8	3.55	3.15	2.05	1.75	1.6	1.7
4.....	2.0	2.1	1.9	2.2	2.1	4.2	3.5	3.1	2.0	1.75	1.6	.....
5.....	2.0	2.08	2.0	2.2	2.25	4.2	3.6	3.1	2.0	1.75	1.6	.....
6.....	2.0	2.08	2.1	2.3	2.3	3.6	3.6	3.05	2.0	1.75	1.6	.....
7.....	2.0	2.08	2.15	2.25	2.4	3.5	3.45	3.0	2.0	1.7	1.6	.....
8.....	2.0	2.08	2.2	2.25	2.5	3.6	3.55	2.95	2.0	1.7	1.6	.....
9.....	2.0	2.08	2.2	2.4	2.5	3.6	3.6	2.95	2.0	1.7	1.6	.....
10.....	2.0	2.08	2.1	2.5	2.45	3.5	3.65	2.95	1.95	1.7	1.65	.....
11.....	2.0	2.1	2.1	2.55	2.55	3.6	3.7	2.9	1.95	1.7	1.65	.....
12.....	2.0	2.1	2.1	2.55	2.55	3.8	3.7	2.85	1.95	1.7	1.65	.....
13.....	2.0	2.1	2.1	2.6	2.55	3.9	3.65	2.7	1.9	1.65	1.65	.....
14.....	2.0	1.95	2.1	2.7	2.55	4.0	3.55	2.7	1.9	1.65	1.65	.....
15.....	2.0	1.95	2.1	2.7	2.5	4.25	3.55	2.7	1.9	1.65	1.65	.....
16.....	2.0	2.0	2.05	2.6	2.45	4.2	3.55	2.6	1.85	1.6	1.7	.....
17.....	2.0	1.95	2.0	2.3	2.45	4.2	3.45	2.65	1.85	1.6	1.7	.....
18.....	2.0	2.15	2.0	2.5	2.5	4.3	3.4	2.6	1.85	1.6	1.7	.....
19.....	2.0	2.15	2.0	2.6	2.55	4.5	3.4	2.6	1.8	1.6	1.7	.....
20.....	2.0	2.15	1.95	2.6	2.5	8.0	3.35	2.6	1.8	1.6	1.7	.....
21.....	2.0	2.2	1.95	2.5	2.5	6.4	3.35	2.6	1.8	1.6	1.6	.....
22.....	2.0	2.3	1.95	2.6	2.5	6.0	3.4	2.55	1.8	1.6	1.6	.....
23.....	2.0	2.9	1.95	2.5	2.45	4.85	3.35	2.5	1.75	1.6	1.6	.....
24.....	2.0	2.75	1.9	2.5	2.4	4.5	3.4	2.5	1.75	1.6	1.6	.....
25.....	2.0	2.5	1.9	2.5	2.65	4.2	3.4	2.5	1.75	1.6	1.6	.....
26.....	2.0	2.2	2.0	2.4	3.0	3.9	3.4	2.3	1.75	1.6	1.6	.....
27.....	2.0	2.3	2.0	2.2	3.2	3.8	3.35	2.3	1.75	1.6	1.6	.....
28.....	2.0	2.3	2.05	2.3	3.8	3.7	3.35	2.25	1.75	1.6	1.6	.....
29.....	2.0	2.3	2.1	2.1	.....	3.7	3.4	2.25	1.75	1.6	1.6	.....
30.....	2.2	2.2	2.15	2.1	.....	3.6	3.4	2.2	1.75	1.6	1.6	.....
31.....	2.3	.....	2.2	2.2	.....	3.5	.....	2.2	.....	1.6	1.6	.....

NOTE.—No ice reported during 1909; probably ice during part of December. River reported frozen about half way across Jan. 1 to Feb. 27, 1910. Beginning May 26 observations made on new vertical staff about 100 yards below the site of the old staff gage.

Daily discharge, in second-feet, of North Fork of Malheur River near Beulah, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1							242	199	189	74	41	41
2							257	187	199	67	41	41
3							257	187	227	67	41	41
4							242	213	257	60	36	106
5							227	213	257	60	36	53
6							213	221	257	60	36	74
7							213	221	242	60	36	67
8							213	213	227	60	30	67
9							199	199	199	60	30	60
10							199	199	187	60	30	60
11							213	199	187	53	30	60
12							199	194	164	53	25	53
13							199	175	153	53	25	53
14							242	175	153	53	30	53
15							242	175	153	53	30	51
16							257	164	153	53	36	51
17							257	164	153	47	39	51
18							257	164	153	41	41	47
19							242	164	153	41	41	47
20							227	153	164	41	36	47
21						153	213	153	153	30	41	48
22						143	213	153	143	30	41	47
23						153	207	153	143	30	41	47
24						199	213	153	143	30	41	53
25						213	175	153	124	36	41	53
26						242	175	153	106	36	41	53
27						257	199	175	98	36	41	60
28						289	213	187	98	36	41	60
29						355	213	213	98	36	41	60
30						257	199	199	90	47	41	60
31						227	227	187	-----	47	41	-----
1909-10.												
1	53	67	82	-----	56	1,570	540	395	95	46	30	30
2	53	67	74	-----	50	1,840	570	370	95	46	30	35
3	53	67	47	-----	38	1,570	540	322	87	46	30	40
4	53	67	41	-----	50	1,040	510	300	79	46	30	-----
5	53	64	53	-----	66	1,040	570	300	79	46	30	-----
6	53	64	67	-----	72	570	570	281	79	46	30	-----
7	53	64	74	-----	84	510	480	262	79	40	30	-----
8	53	64	82	-----	98	570	540	246	79	40	30	-----
9	53	64	82	-----	98	570	570	246	79	40	30	-----
10	53	64	67	-----	91	510	605	246	72	40	35	-----
11	53	67	67	-----	105	570	640	230	72	40	35	-----
12	53	67	67	-----	105	720	640	215	72	40	35	-----
13	53	67	67	-----	105	800	605	174	64	35	35	-----
14	53	47	67	-----	105	880	540	174	64	35	35	-----
15	53	47	67	-----	98	1,080	540	174	64	35	35	-----
16	53	53	60	-----	91	1,040	540	150	58	30	40	-----
17	53	47	53	-----	91	1,040	480	162	58	30	40	-----
18	53	74	53	-----	98	1,120	450	150	58	30	40	-----
19	53	74	53	-----	105	1,300	450	150	51	30	40	-----
20	53	74	47	-----	98	4,900	422	150	51	30	40	-----
21	53	82	47	-----	98	3,140	422	150	51	30	30	-----
22	53	98	47	-----	98	2,700	450	140	51	30	30	-----
23	53	227	47	-----	91	1,620	422	130	46	30	30	-----
24	53	187	41	-----	84	1,300	450	130	46	30	30	-----
25	53	133	41	-----	122	1,040	450	130	46	30	30	-----
26	53	82	53	-----	196	800	450	131	46	30	30	-----
27	53	98	53	-----	345	720	422	131	46	30	30	-----
28	53	98	60	-----	720	640	422	122	46	30	30	-----
29	53	98	67	-----	-----	640	450	122	46	30	30	-----
30	82	82	74	-----	-----	570	450	112	46	30	30	-----
31	98	-----	82	-----	-----	510	-----	112	-----	30	30	-----

Daily discharge determined from rating curves as follows:

For 1909 well defined between 40 and 180 second-feet.

For the old chain gage, Jan. 1 to May 25, 1910, well defined between 45 and 550 second-feet, but only approximate above 2,500 second-feet; new staff gage, May 26 to Sept. 30, well defined between 50 and 160 second-feet. Discharge for Feb. 1 to 27 estimated because of presence of ice.

Monthly discharge of North Fork of Malheur River near Beulah, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
March 21-31.....	355	143	226	4,940	A.
April.....	257	175	221	13,200	A.
May.....	221	153	183	11,300	A.
June.....	257	71	167	9,940	A.
July.....	74	30	48.7	2,990	B.
August.....	41	25	36.9	2,270	B.
September.....	106	41	55.5	3,300	B.
The period.....				47,900	
1909-10.					
October.....	98	53	55.4	3,410	B.
November.....	227	47	81.8	4,870	B.
December.....	82	41	60.7	3,730	B.
January.....			a 50	3,070	C.
February.....	720	38	124	6,890	C.
March.....	4,900	510	1,190	73,200	C.
April.....	640	422	506	30,100	A.
May.....	395	112	197	12,100	A.
June.....	95	46	63.5	3,780	A.
July.....	46	30	35.5	2,180	B.
August.....	40	30	32.6	2,000	C.
September.....			a 42	2,500	C.
The year.....	4,900		204	148,000	

a Estimated.

BULLY CREEK ABOVE VALE, OREG.

Location.—In sec. 4, T. 18 S., R. 43 E., at Warm Springs stage station, one-eighth mile below the mouth of Cottonwood Creek, and 13 miles above Vale.

Records presented.—August 10, 1903, to March 11, 1904; January 24, 1905, to March 31, 1907; February 1 to March 12, 1910.

Drainage area.—585 square miles.

Gage.—Inclined and vertical staff.

Channel.—Gravel, sand, and small boulders; shifting.

Discharge measurements.—Made from cable.

Winter flow.—Slightly affected by ice.

Diversions.—Considerable areas along bottom lands of valley irrigated with flood waters.

Accuracy.—Results fair.

Estimates of monthly discharge are included with those for the station at Vale, Oreg.

Discharge measurements of Bully Creek above Vale, Oreg., in 1903-1906 and 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Fect.</i>	<i>Sec.-ft.</i>	1905.		<i>Fect.</i>	<i>Sec.-ft.</i>
Aug. 11	J. H. Lewis.....	1.88	0.3	Aug. 8 ^b	E. N. Smith.....	1.69	0.3
Sept. 24	do.....	2.03	2	Dec. 30 ^c	R. S. Hall.....	2.17	6.1
Dec. 11	do.....	2.60	12	1906.			
1904.				Jan. 28	R. S. Hall.....	2.03	7.8
Feb. 27	J. H. Lewis.....	5.50	560	Mar. 26	do.....	3.98	579
1905.				Apr. 27	do.....	4.60	1,100
Jan. 30	Smith and Johnson....	2.18	27	Apr. 28	do.....	4.19	826
Feb. 22	Smith and Griffin.....	2.66	85	Apr. 10	do.....	4.58	1,010
23	E. N. Smith.....	2.58	69	Apr. 11	do.....	3.88	704
25	do.....	3.40	294	May 5	do.....	3.70	567
Mar. 9	Smith and Griffin.....	3.10	215	June 15	do.....	2.00	52
Apr. 20	E. N. Smith.....	2.35	33	1910.			
June 9	do.....	2.00	12	Dec. 30	I. E. Oakes.....	1.22	20.4
June 26 ^a	do.....	1.88	4.4				
July 8	do.....	1.79	1.7				

a Made one-half mile above cable.

b Weir measurement.

c Ice present.

Daily gage height, in feet, of Bully Creek above Vale, Oreg., for 1903-1907 and 1910.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
1903-4.									
1		2.00	2.03	2.10	2.55	2.60	2.47	5.00	
2		2.00	2.03	2.14	2.50	2.60	2.42	5.35	
3		2.00	2.10	2.18	2.37	2.60	2.45	5.00	
4		2.00	2.10	2.18	2.34	2.60	2.60	5.24	
5		2.00	2.10	2.18	2.38	2.60	2.60	4.70	
6		2.00	2.10	2.18	2.40	2.60	2.54	5.40	
7		2.00	2.10	2.18	2.40	2.60	2.50	7.80	
8		2.00	2.10	2.18	2.40	2.60	2.50	7.70	
9		2.00	2.10	2.18	2.51	2.60	2.50	5.20	
10		2.10	2.10	2.18	2.46	2.90	2.50	5.20	
11	1.88	2.10	2.10	2.45	2.55	2.60	2.55	.....
12	1.88	2.10	2.10	2.50	2.54	2.60	2.61	.....
13	1.87	2.10	2.10	2.40	2.55	2.60	2.60	.....
14	1.86	2.10	2.10	2.55	2.60	2.60	2.54	.....
15	1.86	2.10	2.10	2.45	2.60	2.60	2.71	.....
16	1.86	2.10	2.10	2.25	2.60	2.60	6.00	.....
17	1.86	2.10	2.10	2.15	2.62	2.60	3.90	.....
18	1.86	2.10	2.10	2.20	2.60	2.60	2.75	.....
19	1.86	2.10	2.10	2.36	2.60	2.60	2.55	.....
20	1.86	2.10	2.10	2.40	2.60	2.60	2.50	.....
21	1.86	2.10	2.10	2.40	2.60	2.60	2.50	.....
22	1.86	2.10	2.10	2.40	2.60	2.60	7.25	.....
23	1.86	2.10	2.10	3.25	2.60	2.60	6.75	.....
24	1.86	2.06	2.10	3.40	2.60	2.60	8.50	.....
25	2.37	2.03	2.10	3.00	2.60	2.60	7.44	.....
26	2.59	2.03	2.10	3.00	2.60	2.60	6.20	.....
27	2.15	2.03	2.10	2.90	2.60	2.57	5.62	.....
28	2.10	2.03	2.10	2.82	2.60	2.50	5.00	.....
29	2.10	2.03	2.10	2.75	2.60	2.52	5.10	.....
30	2.00	2.03	2.10	2.64	2.60	2.51	.....	.....
31	2.00	.....	2.10	.....	2.60	2.50	.....	.....
Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.									
1		2.12	3.30	2.96	2.00	2.00	2.00	1.70	1.64
2		2.10	3.28	3.20	2.00	2.00	2.00	1.70	1.64
3		2.10	3.30	3.00	2.00	2.00	2.00	1.70	1.64
4		2.10	3.38	2.94	2.00	2.00	2.00	1.70	1.64
5		2.10	3.62	2.94	2.00	2.00	1.90	1.70	1.64
6		2.10	3.55	2.90	2.00	2.00	1.90	1.70	1.64
7		2.60	3.45	2.80	2.00	2.00	1.86	1.70	1.64
8		2.60	3.20	2.80	2.00	2.00	1.80	1.68	1.64
9		2.60	3.10	2.75	2.00	2.00	1.80	1.68	1.64
10		2.60	3.10	2.75	2.00	2.00	1.80	1.68	1.64
11		2.60	3.10	2.70	2.00	2.00	1.80	1.68	1.64
12		2.18	3.34	2.65	2.00	2.00	1.80	1.66	1.64
13		2.30	3.30	2.60	2.00	2.00	1.80	1.66	1.66
14		2.20	3.30	2.60	2.00	2.00	1.80	1.66	1.66
15		2.20	3.10	2.60	2.00	2.00	1.80	1.64	1.66
16		2.30	2.98	2.56	2.00	2.00	1.80	1.64	1.68
17		2.42	2.98	2.50	2.00	2.00	1.80	1.64	1.70
18		2.22	3.00	2.46	2.00	2.00	1.80	1.64	1.70
19		2.20	3.00	2.40	2.00	2.00	1.80	1.64	1.70
20		2.20	3.10	2.35	2.00	2.00	1.80	1.64	1.70
21		2.45	3.56	2.26	2.00	2.00	1.80	1.64	1.70
22		2.70	3.26	2.22	2.00	2.00	1.80	1.64	1.70
23		2.70	3.12	2.22	2.00	2.00	1.80	1.64	1.70
24	2.36	3.40	3.20	2.20	2.00	2.00	1.80	1.64	1.70
25	2.32	3.40	3.00	2.18	2.00	2.00	1.70	1.64	1.72
26	2.21	3.44	3.00	2.10	2.00	2.00	1.70	1.64	1.72
27	2.18	3.40	2.94	2.04	2.00	2.00	1.70	1.64	1.72
28	2.23	3.20	2.90	2.00	2.00	2.00	1.70	1.64	1.74
29	2.19	.....	2.90	2.00	2.00	2.00	1.70	1.64	1.74
30	2.18	.....	2.90	2.00	2.00	2.00	1.70	1.64	1.74
31	2.14	.....	2.95	.....	2.00	.....	1.70	1.64	.....

Daily gage height, in feet, of Bully Creek above Vale, Oreg., 1903-1907 and 1910—Cont'd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1.76	1.80	1.90	2.18	2.18	2.14	5.00	2.50	2.18	1.46	1.30	1.30
2.....	1.76	1.80	1.90	2.18	2.20	2.14	4.20	2.40	2.12	1.50	1.30	1.30
3.....	1.76	1.80	1.90	2.16	2.24	2.16	4.00	2.30	2.12	1.50	1.30	1.30
4.....	1.78	1.80	1.92	2.15	2.26	2.18	3.70	2.20	2.14	1.50	1.30	1.30
5.....	1.78	1.82	1.94	2.12	2.28	2.20	4.20	2.00	2.18	1.50	1.30	1.30
6.....	1.78	1.82	1.96	2.12	2.30	2.20	4.50	2.00	2.18	1.50	1.30	1.30
7.....	1.78	1.84	1.96	2.12	2.26	2.30	4.30	1.96	2.18	2.00	1.30	1.30
8.....	1.78	1.84	1.98	2.14	2.20	2.36	4.00	1.90	2.10	1.80	1.30	1.30
9.....	1.78	1.84	1.98	2.14	2.10	2.65	4.30	1.80	2.00	1.70	1.30	1.30
10.....	1.78	1.86	1.98	2.16	2.08	2.80	3.80	1.76	1.90	1.60	1.30	1.30
11.....	1.80	1.88	2.00	2.16	2.00	2.60	3.60	2.10	1.86	1.52	1.30	1.30
12.....	1.80	1.90	2.00	2.16	2.00	2.60	3.50	2.18	1.84	1.60	1.30	1.30
13.....	1.80	1.90	2.00	2.16	2.00	2.60	3.30	2.18	1.80	1:44	1.30	1.30
14.....	1.80	1.90	2.02	2.16	2.08	2.58	3.30	2.10	1.70	1.40	1.30	1.30
15.....	1.80	1.90	2.02	2.14	2.10	2.54	3.20	2.00	1.60	1.40	1.30	1.30
16.....	1.80	1.90	2.02	2.14	2.10	2.40	3.20	2.00	1.64	1.40	1.30	1.30
17.....	1.80	1.90	2.04	2.12	2.10	2.40	3.10	1.90	1.70	1.40	1.30	1.30
18.....	1.80	1.90	2.04	2.12	2.10	2.40	3.10	1.90	1.70	1.40	1.30	1.30
19.....	1.80	1.90	2.04	2.10	2.10	2.50	3.00	1.80	1.70	1.40	1.30	1.30
20.....	1.80	1.90	2.06	2.08	2.10	2.50	3.00	1.80	1.68	1.40	1.30	1.30
21.....	1.80	1.90	2.06	2.06	2.10	2.54	3.00	1.80	1.68	1.40	1.30	1.30
22.....	1.80	1.90	2.08	2.08	2.10	2.80	3.00	1.78	1.66	1.40	1.30	1.30
23.....	1.80	1.90	2.08	2.08	2.10	3.00	2.80	1.78	1.64	1.40	1.30	1.30
24.....	1.80	1.90	2.08	2.10	2.10	4.30	2.80	1.74	1.64	1.38	1.30	1.30
25.....	1.80	1.90	2.10	2.10	2.10	4.10	2.80	1.74	1.60	1.36	1.30	1.30
26.....	1.80	1.90	2.10	2.10	2.10	4.10	2.60	1.72	1.60	1.34	1.30	1.30
27.....	1.80	1.90	2.12	2.10	2.12	4.50	2.60	1.72	1.58	1.30	1.30	1.30
28.....	1.80	1.90	2.14	2.12	2.10	4.30	2.60	1.72	1.58	1.30	1.30	1.30
29.....	1.80	1.90	2.16	2.12	.....	4.30	2.60	1.80	1.56	1.30	1.30	1.30
30.....	1.80	1.90	2.18	2.14	.....	4.90	2.50	2.20	1.50	1.30	1.30	1.30
31.....	1.80	.....	2.18	2.16	.....	6.10	.....	2.20	.....	1.30	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.						1906-7.							
1.....	1.30	1.30	1.50	1.52	3.00	2.34	16.....	1.30	1.48	1.52	1.64	2.40	2.30
2.....	1.30	1.30	1.50	1.54	3.00	2.30	17.....	1.30	1.48	1.52	1.66	2.40	2.50
3.....	1.30	1.30	1.50	1.54	3.60	2.28	18.....	1.30	1.48	1.54	1.66	2.38	5.50
4.....	1.30	1.30	1.50	1.56	3.40	2.28	19.....	1.30	1.50	1.54	1.68	2.36	4.20
5.....	1.30	1.30	1.52	1.56	4.50	2.28	20.....	1.30	1.50	1.54	1.68	2.34	3.90
6.....	1.30	1.30	1.52	1.58	4.00	2.28	21.....	1.30	1.50	1.56	1.68	2.30	3.60
7.....	1.30	1.32	1.52	1.58	3.50	2.28	22.....	1.30	1.50	1.56	1.68	2.30	3.54
8.....	1.30	1.32	1.54	1.60	3.00	2.30	23.....	1.30	1.50	1.56	1.66	2.30	3.30
9.....	1.30	1.34	1.54	1.60	2.68	2.30	24.....	1.30	1.50	1.56	1.66	2.30	3.30
10.....	1.30	1.34	1.56	1.60	2.60	2.30	25.....	1.30	1.50	1.56	1.66	2.30	3.40
11.....	1.30	1.36	1.56	1.60	2.56	2.30	26.....	1.30	1.50	1.56	1.66	2.48	3.50
12.....	1.30	1.40	1.56	1.60	2.50	2.30	27.....	1.30	1.50	1.56	1.66	2.44	3.30
13.....	1.30	1.44	1.54	1.60	2.46	2.30	28.....	1.30	1.50	1.56	1.66	2.40	3.20
14.....	1.30	1.46	1.54	1.60	2.44	2.30	29.....	1.30	1.50	1.56	3.35	.....	3.10
15.....	1.30	1.46	1.54	1.64	2.40	2.30	30.....	1.30	1.50	1.54	2.60	.....	3.00
							31.....	1.30	.....	1.52	4.30	.....	3.06

Daily gage height, in feet, of Bully Creek above Vale, Oreg., 1903-1907 and 1910—Cont'd.

Day.	Feb.	Mar.	Day.	Feb.	Mar.	Day.	Feb.	Mar.
1910.			1910.			1910.		
1.....		7.0	11.....	1.8		21.....		
2.....	1.7	4.65	12.....	1.8		22.....		
3.....		4.4	13.....	1.7		23.....	1.7	
4.....		4.85	14.....	1.7		24.....		
5.....		3.25	15.....			25.....	1.8	
6.....	1.95	4.8	16.....	2.0		26.....	2.3	
7.....		4.4	17.....	1.9		27.....	2.2	
8.....		4.25	18.....	1.9		28.....	4.1	
9.....	1.9	4.0	19.....	1.7		29.....		
10.....			20.....	1.7		30.....		
						31.....		

NOTE.—Discharge relation affected by ice Dec. 12, 1906, to Jan. 29, 1907.

Daily discharge, in second-feet, of Bully Creek above Vale, Oreg., for 1903-1907, 1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1903.			1903.			1903.		
1.....		1.5	11.....	0.4	3.0	21.....	0.3	3.0
2.....		1.5	12.....	.4	3.0	22.....	.3	3.0
3.....		1.5	13.....	.4	3.0	23.....	.3	3.0
4.....		1.5	14.....	.3	3.0	24.....	.3	2.4
5.....		1.5	15.....	.3	3.0	25.....	7.4	2.0
6.....		1.5	16.....	.3	3.0	26.....	11.6	2.0
7.....		1.5	17.....	.3	3.0	27.....	3.8	2.0
8.....		1.5	18.....	.3	3.0	28.....	3.0	2.0
9.....		1.5	19.....	.3	3.0	29.....	3.0	2.0
10.....		3.0	20.....	.3	3.0	30.....	1.5	2.0
						31.....	1.5	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1903-4.							1903-4.						
1.....	2.0	3.0	11	13	9.0	400	16.....	3.0	5.2	12	13	761	
2.....	2.0	3.6	10	13	8.0	507	17.....	3.0	3.8	13	13	154	
3.....	3.0	4.2	7.4	13	8.5	400	18.....	3.0	4.5	12	13	22	
4.....	3.0	4.2	6.8	13	13	470	19.....	3.0	7.2	12	13	10	
5.....	3.0	4.2	7.6	13	13	318	20.....	3.0	8.0	12	13	9.5	
6.....	3.0	4.2	8.0	13	10	527	21.....	3.0	8.0	12	13	9.5	
7.....	3.0	4.2	8.0	13	9.5	1,830	22.....	3.0	8.0	12	13	1,420	
8.....	3.0	4.2	8.0	13	9.5	1,780	23.....	3.0	60	12	13	1,120	
9.....	3.0	4.2	10	13	9.5	470	24.....	3.0	77	12	13	1,940	
10.....	3.0	4.2	9.2	13	9.5	470	25.....	3.0	35	12	13	1,570	
11.....	3.0	9.0	11	13	10		26.....	3.0	35	12	13	861	
12.....	3.0	10	11	13	13		27.....	3.0	27	12	10.5	607	
13.....	3.0	8.0	11	13	13		28.....	3.0	21	12	9.5	400	
14.....	3.0	11	12	13	10		29.....	3.0	18	12	10	434	
15.....	3.0	9.0	12	13	20		30.....	3.0	13	12	10		
							31.....	3.0		12	9.5		

Daily discharge, in second-feet, of Bully Creek above Vale, Oreg., for 1903-1907 and 1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.					18	261	163	11	11	11	0.3	0.1
2.					17	255	231	11	11	11	.3	.1
3.					17	261	174	11	11	11	.3	.1
4.					17	286	157	11	11	11	.3	.1
5.					17	365	157	11	11	6.0	.3	.1
6.					17	341	146	11	11	6.0	.3	.1
7.					18	308	120	11	11	4.4	.3	.1
8.					19	231	120	11	11	2.0	.2	.1
9.					20	202	108	11	11	2.0	.2	.1
10.					20	202	108	11	11	2.0	.2	.1
11.					21	202	96	11	11	2.0	.2	.1
12.					22	273	84	11	11	2.0	.2	.1
13.					32	261	72	11	11	2.0	.2	.2
14.					24	261	72	11	11	2.0	.2	.2
15.					24	202	72	11	11	2.0	.1	.2
16.					32	168	65	11	11	2.0	.1	.2
17.					43	168	54	11	11	2.0	.1	.3
18.					26	174	48	11	11	2.0	.1	.3
19.					24	174	41	11	11	2.0	.1	.3
20.					24	202	36	11	11	2.0	.1	.3
21.					47	344	29	11	11	2.0	.1	.3
22.					96	249	26	11	11	2.0	.1	.3
23.					96	208	26	11	11	2.0	.1	.3
24.				37	292	231	24	11	11	2.0	.1	.3
25.				34	292	174	22	11	11	.3	.1	.6
26.				29	305	174	17	11	11	.3	.1	.6
27.				22	292	157	13	11	11	.3	.1	.6
28.				26	231	146	11	11	11	.3	.1	.9
29.				23	146	11	11	11	11	.3	.1	.9
30.				22	146	11	11	11	11	.3	.1	.9
31.				19	160	11	11	11	11	.3	.1	.9
1905-6.												
1.	1.2	2.0	6.0		23	20	1,400	140	77	6	3	3
2.	1.2	2.0	6.0		24	20	845	120	68	7	3	3
3.	1.2	2.0	6.0		27	21	725	100	68	7	3	3
4.	1.6	2.0			29	23	565	80	71	7	3	3
5.	1.6	2.8			30	24	845	50	77	7	3	3
6.	1.6	2.8			32	24	1,040	50	77	7	3	3
7.	1.6	3.6			29	32	910	45	77	50	3	3
8.	1.6	3.6			24	38	725	38	65	28	3	3
9.	1.6	3.6			17	85	910	28	50	19	3	3
10.	1.6	4.4			16	120	615	24	38	12	3	3
11.	2.0	5.2			11	74	515	65	34	8	3	3
12.	2.0	6.0			11	74	470	77	32	7	3	3
13.	2.0	6.0			11	74	385	77	28	5	3	3
14.	2.0	6.0			16	70	385	65	19	4	3	3
15.	2.0	6.0			17	63	345	50	12	4	3	3
16.	2.0	6.0			17	42	345	50	15	4	3	3
17.	2.0	6.0			17	42	310	38	19	4	3	3
18.	2.0	6.0			17	42	310	38	19	4	3	3
19.	2.0	6.0			17	56	275	28	19	4	3	3
20.	2.0	6.0			17	56	275	28	18	4	3	3
21.	2.0	6.0			17	63	275	28	18	4	3	3
22.	2.0	6.0			17	120	275	26	16	4	3	3
23.	2.0	6.0			17	174	215	26	15	4	3	3
24.	2.0	6.0			17	815	215	23	15	4	3	3
25.	2.0	6.0			17	680	215	23	12	4	3	3
26.	2.0	6.0			17	680	165	21	12	3	3	3
27.	2.0	6.0			18	960	165	21	11	3	3	3
28.	2.0	6.0			17	815	165	21	11	3	3	3
29.	2.0	6.0			17	815	165	28	10	3	3	3
30.	2.0	6.0				1,280	140	80	7	3	3	3
31.	2.0					2,640		80		3	3	

Daily discharge, in second-feet, of Bully Creek above Vale, Oreg., for 1903-1907 and 1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.							1906-7.						
1.....	3	3	7	8	275	108	16.....	3	6	8	15	120	100
2.....	3	3	7	9	275	100	17.....	3	6	8	16	120	140
3.....	3	3	7	9	515	96	18.....	3	6	9	16	116	1,860
4.....	3	3	7	10	425	96	19.....	3	7	9	18	112	845
5.....	3	3	8	10	1,040	96	20.....	3	7	9	18	108	670
6.....	3	3	8	11	725	96	21.....	3	7	10	18	100	515
7.....	3	3	8	11	470	96	22.....	3	7	10	18	100	488
8.....	3	3	9	12	275	100	23.....	3	7	10	16	100	385
9.....	3	3	9	12	185	100	24.....	3	7	10	16	100	385
10.....	3	3	10	12	165	100	25.....	3	7	10	16	140	425
11.....	3	4	10	12	155	100	26.....	3	7	10	16	136	470
12.....	3	4	10	12	140	100	27.....	3	7	10	16	128	385
13.....	3	5	9	12	132	100	28.....	3	7	10	16	120	345
14.....	3	6	9	12	128	100	29.....	3	7	10	405	310	
15.....	3	6	9	15	120	100	30.....	3	7	9	165	275	
							31.....	3		8	910	296	

Day.	Feb.	Mar.	Day.	Feb.	Mar.	Day.	Feb.	Mar.
1910.			1910.			1910.		
1.....	80	4,130	11.....	100	.....	21.....	.....	80
2.....	80	1,520	12.....	100	.....	22.....	.....	80
3.....	92	1,320	13.....	80	.....	23.....	.....	80
4.....	104	1,710	14.....	80	.....	24.....	.....	90
5.....	117	590	15.....	110	.....	25.....	.....	100
6.....	130	1,660	16.....	140	.....	26.....	.....	215
7.....	127	1,320	17.....	120	.....	27.....	.....	190
8.....	124	1,220	18.....	120	.....	28.....	.....	1,110
9.....	120	1,040	19.....	80	.....	29.....	.....	.....
10.....	110	.....	20.....	80	.....	30.....	.....	.....
						31.....	.....	.....

NOTE.—Daily discharge determined as follows:

1903. From fairly well-defined rating curves.

1904. From curves fairly well defined below 1,000 second-feet.

1905. From curves well defined above 10 second-feet. Discharge Feb. 7-11 interpolated because of probability of ice.

1906 and 1907. Jan. 1 to Mar. 31, 1906. From curve fairly well defined below 1,400 second-feet; Apr. 1, 1906, to Mar. 31, 1907, from fairly well defined curve.

1910. From poorly defined rating curve.

Estimates of monthly discharge included with those for station at Vale.

BULLY CREEK AT VALE, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 6, T. 18 S., R. 45 E., at highway bridge at Vale, near mouth of stream.

Records presented.—April 8, 1904, to December 31, 1905.

Drainage area.—650 square miles.

Gage.—Standard chain; staff for measuring down from a floor beam used prior to October 29, 1904.

Channel.—Clay and sand; shifting. Floods in Malheur River cause backwater at gage.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—No ice recorded.

Diversions.—Five small ditches divert water during irrigating season between Warm Springs and this station.

Accuracy.—Results fair. No estimates made for 1905 after station was reestablished above Vale.

Discharge measurements of Bully Creek at Vale, Oreg., in 1904-1907.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Feb. 24	J. H. Lewis.....	7.09	1,126	Mar. 23	Smith and Johnson.....	4.98	299
Apr. 8	H. D. Newell.....	7.00	968	30	J. M. Griffin.....	4.40	146
11	do.....	^a 8.40	1,440	Apr. 11	do.....	3.95	91
12	do.....	7.50	1,420	27	do.....	3.29	23.7
14	do.....	8.00	1,390	June 10	E. N. Smith.....	3.75	75
16	do.....	7.75	1,050	27	do.....	3.48	28.7
25	J. M. Griffin.....	6.90	698	July 29	do.....	3.05	4.7
May 7	do.....	5.76	210	Sept. 11	W. C. Sawyer.....	3.05	1.8
9	Murphy and Sawyer.....	5.50	180	Oct. 12	Sawyer and Hall.....	3.05	2.1
June 16	W. C. Sawyer.....	4.10	22	Nov. 7	R. S. Hall.....	3.26	7.6
Aug. 26	Smith and Sawyer.....	3.78	4	Dec. 27	do.....	3.17	6.8
Sept. 24	E. N. Smith.....	3.75	3				
1905.				1906.			
Jan. 25	E. N. Smith.....	3.70	16.1	Jan. 29	R. S. Hall.....	3.22	8.5
Feb. 1	P. H. Johnson.....	3.70	20.9	Feb. 15	do.....	3.30	11
11	J. M. Griffin.....	3.60	9.9	Mar. 3	do.....	3.36	16
23	Griffin and Smith.....	4.32	74	24	do.....	5.52	435
25	J. M. Griffin.....	5.95	447	Nov. 28	do.....		^b 3
Mar. 2	E. N. Smith.....	5.43	429	1907.			
3	P. H. Johnson.....	5.63	516	Apr. 26	I. E. Oakes.....	4.75	59
9	J. M. Griffin.....	4.80	145				

^a Gage height uncertain, may be 7.76 feet.^b Estimated, creek frozen.

Daily gage height, in feet, of Bully Creek at Vale, Oreg., for 1904-5.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Dry.	Apr.	May.	June.	July.	Aug.	Sept.
1904.							1904.						
1.....		6.6	4.1	4.1	3.9	3.7	16.....	8.0	5.0	4.1	4.2	3.8	3.7
2.....		6.4	4.1	4.1	3.9	3.7	17.....	7.8	5.0	4.1	4.2	3.8	3.7
3.....		6.4	4.1	4.1	3.9	3.7	18.....	7.4	5.0	4.1	4.2	3.8	3.7
4.....		6.2	4.1	4.1	3.9	3.7	19.....	7.2	4.9	4.1	4.1	3.8	3.7
5.....		6.3	4.1	4.1	3.9	3.7	20.....	7.8	4.7	4.1	4.1	3.8	3.7
6.....		5.9	4.1	4.1	3.9	3.7	21.....	7.85	4.5	4.1	4.1	3.8	3.7
7.....		5.7	4.1	4.1	3.9	3.7	22.....	7.9	4.4	4.1	4.1	3.7	3.7
8.....	7.0	5.6	4.1	5.0	3.8	3.7	23.....	8.0	4.3	4.1	4.1	3.7	3.7
9.....	7.2	5.5	4.1	4.4	3.8	3.7	24.....	7.5	4.2	4.1	4.0	3.7	3.7
10.....	7.5	5.4	4.1	4.3	3.8	3.7	25.....	7.2	4.1	4.1	4.0	3.7	3.7
11.....	7.5	5.3	4.1	4.2	3.8	3.7	26.....	7.0	4.1	4.1	4.0	3.7	3.7
12.....	8.0	5.1	4.1	4.3	3.8	3.7	27.....	6.8	4.1	4.1	4.0	3.7	3.7
13.....	8.1	5.0	4.1	4.3	3.8	3.7	28.....	6.8	4.1	4.1	4.0	3.7	3.7
14.....	8.2	5.0	4.1	4.3	3.8	3.7	29.....	6.7	4.1	4.1	4.0	3.7	3.7
15.....	8.4	5.0	4.1	4.2	3.8	3.7	30.....	6.6	4.1	4.1	3.9	3.7	3.7
							31.....		4.1		3.9	3.7	

Daily gage height, in feet, of Bully Creek at Vale, Oreg., for 1904-5—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	3.7	3.75	3.65	3.7	3.7	5.3	4.3	3.3	3.4	3.3	3.1	3.02
2.....	3.7	3.75	3.5	3.6	3.7	5.5	4.6	3.25	3.4	3.3	3.1	3.03
3.....	3.7	3.75	3.45	3.6	3.7	5.5	4.6	3.3	3.4	3.3	3.1	3.03
4.....	3.7	3.75	3.2	3.5	3.7	6.7	4.4	3.3	3.4	3.3	3.0	3.03
5.....	3.7	3.7	3.3	3.5	3.7	5.4	4.3	3.25	3.6	3.3	3.0	3.03
6.....	3.7	3.7	3.2	3.5	3.6	5.7	4.2	3.3	3.6	3.3	3.0	3.05
7.....	3.75	3.7	3.45	3.5	3.6	5.45	4.15	3.25	3.75	3.3	3.0	3.04
8.....	3.75	3.7	3.7	3.5	3.4	4.95	4.1	3.2	3.8	3.3	3.02	3.03
9.....	3.75	3.7	3.6	3.5	3.6	4.75	4.0	3.2	3.8	3.3	3.01	3.03
10.....	3.75	3.7	3.7	3.5	3.6	4.6	4.0	3.25	3.75	3.3	3.0	3.03
11.....	3.75	3.65	3.7	3.5	3.6	4.6	3.95	3.25	3.7	3.2	3.01	3.03
12.....	3.75	3.65	3.7	3.5	3.5	4.9	3.9	3.25	3.65	3.25	3.01	3.04
13.....	3.75	3.65	3.8	3.5	3.5	5.1	4.0	3.3	3.6	3.25	3.01	3.03
14.....	3.75	3.65	3.8	3.3	3.7	5.0	3.75	3.3	3.8	3.2	3.01	3.04
15.....	3.75	3.65	4.4	3.4	3.7	4.8	3.6	3.3	3.85	3.2	3.0	3.02
16.....	3.75	3.65	3.7	3.4	3.5	4.7	3.6	3.3	3.65	3.2	3.01	3.04
17.....	3.75	3.65	3.6	3.5	3.6	4.6	3.5	3.3	3.65	3.2	3.0	3.03
18.....	3.75	3.65	4.2	3.5	3.6	4.5	3.45	3.3	3.65	3.2	3.0	3.04
19.....	3.8	3.65	3.6	3.5	3.5	4.5	3.4	3.3	3.7	3.2	3.0	3.04
20.....	3.8	3.65	3.7	3.5	3.5	4.4	3.4	3.3	3.6	3.2	3.0	3.04
21.....	3.8	3.65	3.8	3.5	3.7	5.1	3.3	3.3	3.6	3.2	3.01	3.04
22.....	3.8	3.65	3.7	3.5	3.95	5.0	3.3	3.3	3.7	3.15	3.0	3.04
23.....	3.8	3.65	3.8	3.6	4.45	5.1	3.25	3.3	3.6	3.15	3.0	3.06
24.....	3.7	3.65	3.7	4.2	5.4	4.8	3.25	3.3	3.6	3.1	3.01	3.06
25.....		3.65	3.8	3.7	5.75	4.8	3.25	3.3	3.6	3.1	3.01	3.07
26.....		3.65	3.8	3.8	5.55	4.5	3.3	3.3	3.6	3.1	3.0	3.08
27.....		3.65	3.7	3.8	5.6	4.6	3.25	3.3	3.5	3.1	3.01	3.08
28.....		3.65	3.7	3.8	5.4	4.4	3.3	3.45	3.4	3.1	3.02	3.04
29.....	3.7	3.65	3.6	3.8		4.4	3.3	3.45	3.4	3.1	3.01	3.04
30.....	3.7	3.65	3.6	3.65		4.4	3.3	3.4	3.35	3.1	3.02	3.03
31.....	3.75		3.7	3.65		4.4		3.4		3.0	3.02	

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1905.											
1.....	3.05	3.05	3.35	11.....	3.04	3.1	3.25	21.....	3.04	3.2	3.32
2.....	3.06	3.05	3.4	12.....	3.05	3.1	3.2	22.....	3.06	3.25	3.17
3.....	3.04	3.21	3.49	13.....	3.04	3.09	3.2	23.....	3.06	3.28	3.3
4.....	3.04	3.25	3.41	14.....	3.05	3.61	3.12	24.....	3.08	3.16	3.2
5.....	3.03	3.23	3.5	15.....	3.04	3.11	3.12	25.....	3.08	3.19	3.29
6.....	3.03	3.21	3.32	16.....	3.05	3.09	3.2	26.....	3.08	3.42	3.2
7.....	3.04	3.31	3.55	17.....	3.06	3.1	3.17	27.....	3.06	3.47	3.2
8.....	3.04	3.21	3.45	18.....	3.06	3.06	3.2	28.....	3.05	3.32	3.16
9.....	3.04	3.16	3.35	19.....	3.05	3.19	3.23	29.....	3.03	3.34	3.19
10.....	3.06	3.1	3.45	20.....	3.05	3.23	3.45	30.....	3.06	3.36	3.17
								31.....	3.03		3.14

NOTE.—No record of effect of ice.

Daily discharge, in second-feet, of Bully Creek at Vale, Oreg., for 1904-5.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1904.													
1.....		547	22	22	10.5	2.1	16.....	1,300	112	22	28	5.6	2.1
2.....		470	22	22	10.5	2.1	17.....	1,160	112	22	28	5.6	2.1
3.....		470	22	22	10.5	2.1	18.....	914	112	22	28	5.6	2.1
4.....		400	22	22	10.5	2.1	19.....	811	98	22	22	5.6	2.1
5.....		434	22	22	10.5	2.1	20.....	1,160	73	22	22	5.6	2.1
6.....		304	22	22	10.5	2.1	21.....	1,190	53	22	22	5.6	2.1
7.....		252	22	22	10.5	2.1	22.....	1,220	44	22	22	2.1	2.1
8.....	1,000	227	22	112	5.6	2.1	23.....	1,300	36	22	22	2.1	2.1
9.....	1,130	202	22	44	5.6	2.1	24.....	969	28	22	16	2.1	2.1
10.....	1,340	182	22	36	5.6	2.1	25.....	811	22	22	16	2.1	2.1
11.....	1,340	163	22	28	5.6	2.1	26.....	712	22	22	16	2.1	2.1
12.....	1,770	128	22	36	5.6	2.1	27.....	627	22	22	16	2.1	2.1
13.....	1,860	112	22	36	5.6	2.1	28.....	627	22	22	16	2.1	2.1
14.....	1,950	112	22	36	5.6	2.1	29.....	587	22	22	16	2.1	2.1
15.....	1,900	112	22	28	5.6	2.1	30.....	547	22	22	10.5	2.1	2.1
							31.....		22		10.5	2.1	

Daily discharge, in second-feet, of Bully Creek at Vale, Ore., for 1904-5—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Day.	Oct.	Nov.	Dec.	Jan.
1904-5.					1904-5.				
1.....	2.1	18	12	15	16.....	3.3	12	15	4
2.....	2.1	18	6	10	17.....	3.3	12	10	6
3.....	2.1	18	5	10	18.....	3.3	12	10	6
4.....	2.1	18	1	6	19.....	5.6	12	10	6
5.....	2.1	15	2	6	20.....	5.6	12	15	6
6.....	2.1	15	1	6	21.....	5.6	12	21	6
7.....	3.3	15	5	6	22.....	5.6	12	15	6
8.....	3.3	15	15	6	23.....	5.6	12	21	10
9.....	3.3	15	10	6	24.....	2.1	12	15	.....
10.....	3.3	15	15	6	25.....	5.0	12	21	.....
11.....	3.3	12	15	6	26.....	7.0	12	21	.....
12.....	3.3	12	15	6	27.....	10	12	15	.....
13.....	3.3	12	21	6	28.....	12	12	15	.....
14.....	3.3	12	21	2	29.....	15	12	10	.....
15.....	3.3	12	18	4	30.....	15	12	10	.....
					31.....	18	.....	15	.....

NOTE.—Daily discharge determined from rating curves, as follows: Apr. 8-14, 1904, fairly well defined; Apr. 15 to Oct. 24, poorly defined; Oct. 29, 1904, to Jan. 23, 1905, fairly well defined.

Monthly discharge of Bully Creek at Vale, Ore., for 1903-1907 and 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October.....	3.0	2.0	2.94	181	B.
November.....	77	3.0	13.9	827	B.
December.....	13	6.8	10.8	664	B.
January.....	13	9.5	12.5	769	B.
February.....	1,570	8.0	327	18,800	C.
March.....	.....	.....	^a 725	44,600	D.
April.....	.....	.....	^a 1,170	69,600	C.
May.....	547	22	159	9,780	C.
June.....	22	22	22.0	1,310	C.
July.....	112	10.5	26.5	1,630	C.
August.....	10.5	2.1	5.58	343	C.
September.....	2.1	2.1	2.10	125	C.
The year.....	.....	2.0	206	149,000	.....
1904-5.					
October.....	18	2.1	5.30	326	C.
November.....	18	12	13.4	797	B.
December.....	21	1.0	12.9	793	B.
January.....	37	6.0	11.7	719	C.
February.....	305	17	75.1	4,170	B.
March.....	365	146	224	13,800	B.
April.....	231	11	77.1	4,590	B.
May.....	11	11	11.0	676	C.
June.....	11	11	11.0	655	C.
July.....	11	.3	3.11	191	C.
August.....	.3	.1	.17	10	D.
September.....	.9	.1	.30	18	D.
The year.....	365	.1	37.1	26,700	.....

^a Estimated from study of records on Malheur River at Harper's ranch and at Vale.

Monthly discharge of Bully Creek at Vale, Oreg., for 1903-1907 and 1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....	2	1.2	1.83	112	C.
November.....	6	2	4.93	293	B.
December.....			a 6.0	369	C.
January.....			a 8.0	492	D.
February.....	32	11	19.2	1,070	B.
March.....	2,640	20	324	19,900	B.
April.....	1,400	140	473	28,100	B.
May.....	140	21	50.6	3,110	B.
June.....	77	7	33.7	2,010	B.
July.....	50	3	7.61	468	C.
August.....	3	3	3.0	184	D.
September.....	3	3	3.0	179	D.
The year.....	2,640	1.2	77.9	56,300	
1906-7.					
October.....	3	3	3.0	184	D.
November.....	7	3	5.23	311	D.
December.....	10	7	8.94	550	C.
January.....	910	8	60.1	3,700	C.
February.....	1,040	100	233	12,900	B.
March.....	1,860	96	303	18,600	B.
The period.....				36,200	
1910.					
February.....	1,110	80	144	8,000	D.
March 1-9.....	4,130	590	1,610	28,700	C.

a Estimated from study of records on Malheur River at Harper's ranch and at Vale.

WILLOW CREEK NEAR MALHEUR, OREG.

Location.—In the NE. $\frac{1}{4}$, sec. 14, T. 14 S., R. 41 E., at Beer's ranch, about 5 miles from Malheur, on the road to Huntington.

Records presented.—November 20, 1904, to August 14, 1906.

Drainage area.—259 square miles.

Gage.—Vertical staff.

Channel.—Rock and gravel; practically permanent.

Discharge measurements.—Made from a cable at mouth of canyon, one-half mile above gage, or by wading.

Winter flow.—Sometimes affected by ice.

Diversions.—Beer's ditch diverts water past the gage. Considerable water used for irrigation above station.

Accuracy.—Results fair.

Discharge measurements of Willow Creek near Malheur, Oreg., in 1904-1906.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Fect.</i>	<i>Sec. ft.</i>			<i>Fect.</i>	<i>Sec. ft.</i>
1904. Sept. 20	W. C. Sawyer.....	0.7	4.3	Mar. 23	W. C. Sawyer.....	1.68	45.3
				Sept. 14	.....do.....	.65	4.2
				Nov. 23	R. S. Hall.....	.32	.8
1905. Mar. 2	W. C. Sawyer.....	1.63	36.8	1906.			
2	.....do.....	1.52	37.6	Apr. 5	R. S. Hall.....	4.75	355

Daily gage height, in feet, of Willow Creek near Malheur, Oreg., for 1904-1906.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1			0.85		1.0	1.25	1.54	0.96	0.56	0.85		
2			.75	1.0	1.0	1.52	1.64	1.0	.78			
3			.85		1.0	1.6	1.6	1.12	.82			
4					1.0	1.5	1.52	1.12	.94	.55		
5			.95		1.0	1.7	1.48	1.06	1.0	.5		
6			.95		1.0	1.88	1.36	1.0	1.04	.5		
7			.95		1.2	2.1	1.32	1.0	.94	.5		
8			.9		1.15	1.94	1.3		1.14	.5		
9			.8		1.0	1.94	1.24		1.0			
10			.8		1.05	1.96	1.26		.98			
11					1.3	1.86	1.26	1.1	1.0			
12					1.0	1.84	1.18	1.14	1.65			
13					1.1	1.8	1.06		1.25			
14					1.2	1.66	1.0		1.15			
15				.8	1.3	1.58	.8		1.1			
16			.8	.85	1.2	1.5	.78		1.0			
17			.8	.85	1.3	1.56	.78		1.0			
18			.8	.9	1.4	1.9	.82		.5			
19			.8	.9	1.45	1.62	1.18	.8	.9			
20		0.85	.8	.95	1.05	1.8	1.2	.76	.82			
21			.85	1.0		1.66	1.06	.76	.84			
22			.85	.95	1.45	1.74	1.06	.76	.66			
23			.85	1.0	1.45	1.64	1.0	.9	.52			
24			.85	1.05	1.2	1.58	.86	.74	.54			0.8
25			.8	1.05	1.6	1.54	.85	.84				.8
26			.85	1.1	1.6	1.44	.98	.84				.8
27			.85	1.05	1.9	1.38	.94	.84	.92			.8
28			.85	1.1	1.7	1.36	.82	.8				.8
29			.85	1.0		1.5	.86	.82	.6			.8
30			.85	1.15		1.4	.94		.65			.8
31				1.0		1.52		.96				
1905-6.												
1	0.8						5.0	1.9	1.9	1.0	0.2	
2	.8						4.0	1.9	1.8	1.0		
3	.8						3.9	1.8	1.8	1.0		
4	.8	.5					5.0	1.5	1.7		.2	
5	.8	.5	.5				5.1	1.3	1.7	.7	.2	
6	.8	.5	.5				5.1	1.3	1.8	.7	.2	
7	.8	.5	.5				5.1	1.2	1.9	.7	.2	
8	.85	.5	.5				4.7	1.2	1.9	.7	.2	
9	.85	.5	.5				4.3	1.2	1.9	.7	.2	
10	.9	.5					4.0	1.2	1.3	.7	.2	
11	.9	.5					3.7	1.0	1.4	.65		
12	.9	.5					3.3	1.0		.65		
13	.9	.45					3.0	1.0		.65	.2	
14	.9	.45					2.9	.9	1.3	.8	.2	
15	.9	.45					2.9	.9	1.3	.7		
16	.9	.45					2.9	.9	1.3	.55		
17	.9	.4					2.9	.8	1.5			
18	.9	.4					2.9	.8	1.25			
19	.8	.4					2.7	.8	1.0			
20	.8	.4					2.8	1.3	.9	.4		
21	.8	.4					2.7	1.4	.95	.4		
22	.8	.4					2.6	1.4	.5	.4		
23	.8	.35				1.3	2.6	1.8	.6	.4		
24	.8	.35				3.8	2.5	1.8	.5			
25	.8	.35				2.5	2.5	1.9	.5			
26	.8	.35				2.5	2.5	1.9	.8			
27	.85	.35				3.0	2.5	1.9	.9	.4		
28	.85					3.0	2.4	1.9	.9	.3		
29	.85					3.5	2.3	1.9	.8	.3		
30	.85					4.1	2.1	1.9	1.0			
31	.85					4.7		1.9				

Daily discharge, in second-feet, of Willow Creek near Malheur, Oreg., for 1904-1906.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1			8.2	12.0	12.5	22	36	11.5	3.0	8.2	0.0	2.0
2			6.0	12.5	12.5	35	42	12.5	6.5	6.4	.0	3.0
3			8.2	12.0	12.5	40	40	17	7.5	4.6	.0	3.0
4			9.6	11.5	12.5	34	35	17	10.5	2.8	.0	3.0
5			11.0	11.0	12.5	46	33	14.5	12.5	2.2	.0	3.0
6			11.0	10.5	12.5	59	27	12.5	14.0	2.2	.0	4.0
7			11.0	10.0	20	78	25	12.5	10.5	2.2	.0	4.0
8			9.5	9.5	18	64	24	12.5	18	2.2	.0	2.0
9			7.0	9.0	12.5	64	22	12.5	12.5	2.0	.0	2.0
10			7.0	8.5	14.5	66	22	16	12.0	2.0	.0	2.0
11			7.0	8.0	24	58	22	16	12.5	2.0	.0	2.0
12			7.0	7.5	12.5	56	19	18	43	2.0	.0	2.0
13			7.0	7.0	16	53	14.5	16	22	2.0	.0	4.0
14			7.0	7.0	20	44	12.5	14.5	18	2.0	.0	4.0
15			7.0	7.0	24	39	7.0	13.0	16	.0	.0	4.0
16			7.0	8.0	20	34	6.5	11.5	12.5	.0	.0	5.0
17			7.0	8.5	24	38	6.5	10.0	12.5	.0	.0	5.0
18			7.0	9.5	29	61	7.5	8.5	2.0	.0	.0	5.0
19			7.0	9.5	32	41	19	7.0	9.5	.0	.0	6.0
20		8.2	7.0	11.0	14	53	20	6.0	7.5	.0	.0	6.0
21		8.2	7.0	12.5	30	44	14.5	6.0	8.0	.0	.0	6.0
22		8.2	7.0	11.0	32	49	14.5	6.0	4.5	.0	.0	7.0
23		8.2	7.5	12.5	32	42	12.5	9.5	2.5	.0	.0	7.0
24		8.2	8.0	14.5	20	39	8.5	6.0	2.7	.0	.0	7.0
25		7.0	8.5	14.0	40	36	8.0	8.0	5.0	.0	2.0	7.0
26		8.2	9.0	16	40	32	12.0	8.0	7.0	.0	2.0	7.0
27		8.2	9.5	14.0	61	28	10.5	8.0	10.0	.0	2.0	7.0
28		8.2	10.0	16	46	27	7.5	7.0	6.8	.0	2.0	7.0
29		8.2	10.5	12.5		34	8.5	7.5	3.5	.0	2.0	7.0
30		8.2	11.0	18		29	10.5	9.0	4.2	.0	2.0	7.0
31			11.5	12.5		35		10.5		.0	2.0	
1905-6.												
1	7.0	6.7					388	57	57	12.5	0.0	
2	7.0	5.2					259	57	51	12.5	.0	
3	7.0	3.7					247	51	51	12.5	.0	
4	7.0	2.2					388	34	45	9.0	.0	
5	7.0	2.2	2.2				402	24	45	5.0	.0	
6	7.0	2.2	2.2				402	24	51	5.0	.0	
7	7.0	2.2	2.2				402	20	57	5.0	.0	
8	8.2	2.2	2.2				348	20	57	5.0	.0	
9	8.2	2.2	2.2				296	20	57	5.0	.0	
10	9.5	2.2					259	20	24	5.0	.0	
11	9.5	2.2					223	12.5	29	4.2	.0	
12	9.5	2.2					178	12.5	29	4.2	.0	
13	9.5	1.7					147	12.5	24	4.2	.0	
14	9.5	1.7					137	9.5	24	7.0	.0	
15	9.5	1.7					137	9.5	24	5.0		
16	9.5	1.7					137	9.5	24	2.8		
17	9.5	1.2					137	7.0	34	2.8		
18	9.5	1.2					137	7.0	22	2.0		
19	7.0	1.2					119	7.0	12.5	1.2		
20	7.0	1.2					128	24	9.5	1.2		
21	7.0	1.2					119	29	11.0	1.2		
22	7.0	1.2					110	29	2.2	1.2		
23	7.0	.8					24	110	51	3.5	1.2	
24	7.0	.8					235	102	51	2.2	1.2	
25	7.0	.8					102	102	57	2.2	1.2	
26	7.0	.8					102	102	57	7.0	1.2	
27	8.2	.8					147	102	57	9.5	1.2	
28	8.2						147	94	57	9.5	.5	
29	8.2						200	86	57	7.0	.5	
30	8.2						271	71	57	12.5	.5	
31	8.2						348		57		.0	

NOTE.—Daily discharge determined from two fairly well defined rating curves, one applicable to gage heights for 1904 and 1905 and the other for 1906. Discharge interpolated or estimated for days on which gage was not read.

Monthly discharge of Willow Creek near Malheur, Oreg., for 1904-1906.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
November 20-30.....	8.2	7.0	8.1	177	B.
December.....	11.5	7.0	8.3	510	B.
January.....	18	7.0	11.1	682	C.
February.....	61	12.5	23.4	1,300	C.
March.....	78	22	44.5	2,740	C.
April.....	42	6.5	18.3	1,090	B.
May.....	18	6.0	11.1	682	B.
June.....	43	2.0	10.5	625	B.
July.....	8.2	.0	1.4	86	D.
August.....	2.0	.0	.45	28	D.
September.....	7.0	2.0	4.7	280	C.
The period.....				8,200	
1905-6.					
October.....	9.5	7.0	8.0 ^a	492	C.
November.....	6.7		a 2.0	119	D.
December.....			a 3.0	184	D.
January.....			a 4.0	246	D.
February.....			a 4.0	222	D.
March.....	348		a 58.0	3,570	C.
April.....	402	71	196	11,700	B.
May.....	57	7.0	32.2	1,980	B.
June.....	57	2.2	26.5	1,580	C.
July.....	12.5	.0	3.9	240	D.
August 1-14.....	.0	.0	.0	0	
The period.....				20,300	

^a Estimated.

NOTE.—Water taken from creek above gage by Beer's ditch from Apr. 8 to July 3, July 15 to Aug. 24, and Sept. 8-12, 1905. The estimated amount diverted by the ditch is as follows:

Acre-feet.		Acre-feet.	
Apr. 8-30.....	92	July 1-3; 15-31.....	60
May.....	124	Aug. 1-24.....	58
June.....	120	Sept. 8-12.....	20

The estimate for Willow Creek does not include this diversion.

WILLOW CREEK AT RESERVOIR SITE NEAR MALHEUR, OREG.

Location.—At reservoir No. 3 of the Willow Creek project, the dam of which is situated in the E. $\frac{1}{2}$ NE. $\frac{1}{4}$ sec. 15, T. 14 S., R. 41 E., about half a mile above the site of the station maintained by the United States Geological Survey, 1904 to 1906, and about 5 miles southeast of Malheur.

Records presented.—March 19 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Several gages used below dam and above backwater from reservoir.

Discharge measurements.—Made with Lallie current meter at high stages. Low-water flow determined by a 1.5-foot sharp-crested rectangular weir with end contractions.

Cooperation.—Records furnished by James A. Green Engineering & Construction Co.

Daily discharge, in second-feet, of Willow Creek at reservoir site, near Malheur, Oreg., for 1910.

Day.	Mar.	Apr.	May.	June.	July.	Day.	Mar.	Apr.	May.	June.	July.
1.....		92.1	13.8	0.48	0.38	16.....		45.7	5.44	0.50	0.22
2.....		88.1	14.9	.44	.36	17.....		45.1	4.73	1.60	
3.....		89.9	19.8	.49	.34	18.....		41.3	3.74	1.48	
4.....		83.2	37.6	.46	.32	19.....	129	38.2	3.76	1.35	
5.....		76.5	34.2	.46	.31	20.....	1,400	33.0	2.56	.74	
6.....		72.9	31.0	.46	.30	21.....	1,260	27.9	2.02	.74	
7.....		68.1	26.7	.48	.29	22.....	1,110	28.8	1.74	.67	
8.....		71.7	21.4	.50	.28	23.....	966	29.5	1.34	.74	
9.....		63.3	16.1	.50	.27	24.....	821	27.5	1.20	.61	
10.....		65.6	16.0	.50	.23	25.....	676	25.3	1.20	.50	
11.....		64.0	16.0	.50	.23	26.....	532	19.7	.94	.48	
12.....		62.3	12.9	.50	.22	27.....	387	14.1	1.39	.46	
13.....		59.2	9.87	.50	.23	28.....	242	8.40	1.84	.44	
14.....		53.9	9.40	.52	.24	29.....	97.7	13.6	1.52	.42	
15.....		48.5	6.40	.80	.22	30.....	93.8	12.6	.75	.40	
						31.....	93.0		1.53		

NOTE.—Daily discharge Mar. 19 to July 8 computed from daily discharge measurements with a Lallie meter except as follows: Mar. 20 to 28, discharge estimated from cross section of the stream and estimated mean velocity; Apr. 20, May 6 and 12, discharge interpolated; June 5 to 9 and possibly a few other days from May 30 to July 8 discharge estimated.

Discharge July 9 to Sept. 30 from computed flow over a 1.5-foot sharp-crested weir with end contractions.

Monthly discharge of Willow Creek at reservoir site, near Malheur, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
March 19-31.....	1,400	93.0	601	15,500
April.....	92.1	8.40	49.0	2,920
May.....	37.6	.75	10.4	640
June.....	1.60	.40	.62	37
July.....	.38		a.24	15
August.....			b.17	10
September.....			b.18	11
The period.....				19,100

a Mean July 17-31 estimated 0.20 second-foot.

b Monthly mean estimated.

WILLOW CREEK NEAR BROGAN,¹ OREG.

Location.—In sec. 14, T. 15 S., R. 42 E., at bridge at Cole's ranch, about 3 miles northwest of Brogan, 28 miles above Vale. January 1 to March 20, 1910, in SW. $\frac{1}{4}$ sec. 27, T. 14 S., R. 42 E.

Records presented.—April 14, 1904, to July 16, 1906; January 1 to September 30, 1910.

Drainage area.—455 square miles.

Gage.—Vertical staff until November 1, 1904; standard chain until 1906; both at same datum. Staff gage at a different datum during 1910.

Channel.—Mud; shifting.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—No records of any ice.

¹ Referred to as "near Dell" in reports for 1904 to 1906.

Diversions.—Considerable water diverted to irrigate bottom lands above station.

The Eldorado mining ditch brings a small volume of water at irregular intervals into the basin of Willow Creek from the headwaters of Burnt River.

Accuracy.—Results fair.

Cooperation.—Records for 1910 furnished by the James A. Green Engineering & Construction Co.

Discharge measurements of Willow Creek near Brogan, Oreg., in 1904-1906.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Fect.</i>	<i>Sec.-ft.</i>	1905.		<i>Fect.</i>	<i>Sec.-ft.</i>
Apr. 14	H. D. Newell.....	7.06	940	Apr. 4	Smith and Griffin.....	2.68	23.1
15	.....do.....	6.86	880	28	.....do.....	2.30	17.4
23	J. M. Griffin.....	5.46	412	June 3	E. N. Smith.....	2.10	11.0
May 12	.....do.....	4.21	187	23	.....do.....	2.02	6.2
June 20	Sawyer and Torkelson..	2.52	18	July 11	.....do.....	.....	.....
July 8	M. W. Torkelson.....	2.29	α 4	Nov. 7	R. S. Hall.....	1.88	2.7
Sept. 3	E. N. Smith.....	2.00	α 1.5				
Nov. 1	W. C. Sawyer.....	2.26	11	1906.			
1905.				Mar. 5	R. S. Hall.....	2.09	10
Jan. 31	Smith and Johnson....	2.30	20.3	27	.....do.....	5.80	371
Mar. 3	J. M. Griffin.....	2.81	44	27	.....do.....	5.00	261
4	.....do.....	3.00	58	28	.....do.....	4.53	175
7	Smith and Griffin.....	3.50	98	Apr. 25	.....do.....	4.17	108
15	Smith and Johnson....	3.55	93	June 15	.....do.....	3.11	36

α Measured by floats.

Daily gage height, in feet, of Willow Creek near Brogan, Oreg., for 1904-1906.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1904.							1904.						
1		5.06	3.30	2.55	1.90	1.90	16		4.00	2.67	2.15	1.90	2.10
2		5.06	3.30	2.60	1.90	1.90	17		4.00	2.49	2.15	1.90	2.10
3		4.89	3.28	2.67	1.90	1.90	18		3.97	2.48	2.10	1.90	2.10
4		4.73	3.23	2.65	1.90	1.90	19		3.95	2.47	2.05	1.90	2.10
5		4.48	3.20	2.30	1.90	1.90	20		3.92	2.48	2.05	1.90	2.10
6		4.40	3.10	2.60	1.90	1.90	21		3.85	2.48	2.00	1.90	2.10
7		4.27	3.05	2.30	1.90	1.90	22		3.80	2.48	2.00	1.90	2.10
8		4.23	2.97	2.35	1.90	1.90	23		5.46	3.80	2.50	2.00	1.90
9		4.23	2.95	2.40	1.90	1.90	24		3.75	2.50	1.97	1.90	2.10
10		4.14	2.97	2.30	1.90	1.90	25		3.62	2.50	1.90	1.90	2.10
11			2.90	2.35	1.90	1.90	26		4.81	3.54	2.51	1.90	1.90
12			4.21	2.90	2.35	1.90	27		4.73	3.50	2.51	1.90	1.90
13			4.20	2.95	2.35	1.90	28		4.56	3.48	2.51	1.95	1.90
14		7.06	4.22	2.80	2.35	1.90	29		5.06	3.40	2.50	1.92	1.90
15		6.86	4.19	2.70	2.30	1.90	30		4.98	3.35	2.50	1.90	1.90
							31		3.30	.....	1.90	1.90	.....

Daily gage height, in feet, of Willow Creek near Brogan, Oreg., for 1904-1906.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1	2.15	2.4	2.3	2.6	-----	-----	3.1	2.5	2.75	2.2	1.8	1.65
2	2.1	2.45	2.3	2.7	2.3	3.4	3.2	2.6	2.7	2.2	1.8	1.65
3	2.15	2.45	2.3	2.7	2.3	2.8	2.9	2.75	2.7	2.2	1.8	1.65
4	2.15	2.45	2.3	2.8	2.4	2.95	2.75	2.5	2.6	2.3	1.7	1.65
5	2.2	2.45	2.3	2.7	2.3	3.4	2.6	2.6	2.5	2.3	1.7	1.65
6	2.2	2.42	2.3	2.8	2.4	3.5	2.5	2.6	2.5	2.2	1.8	1.65
7	2.25	2.4	2.35	2.75	2.4	3.4	2.6	2.7	2.55	2.1	1.8	1.65
8	2.25	2.4	2.4	2.75	2.4	3.5	2.7	2.8	2.5	2.1	1.7	1.65
9	2.3	2.4	2.4	2.75	2.4	3.4	2.75	2.75	2.45	2.0	1.7	1.65
10	2.3	2.35	2.4	2.8	2.4	3.5	2.75	2.7	2.4	2.0	1.7	1.65
11	2.35	2.35	2.4	-----	2.5	3.3	2.75	2.7	-----	1.9	1.7	1.65
12	2.3	2.35	2.4	2.8	2.5	-----	2.7	2.6	-----	1.8	1.7	1.65
13	2.4	2.35	2.4	2.8	2.8	-----	2.7	2.7	-----	1.8	1.7	1.65
14	2.3	2.3	2.4	2.8	3.0	3.8	2.7	2.8	2.5	1.8	1.7	1.65
15	2.4	2.3	2.35	3.2	3.0	4.2	2.5	2.6	2.5	1.8	1.7	1.65
16	2.4	2.3	2.35	3.2	3.0	-----	2.5	2.7	-----	1.8	1.7	1.65
17	2.4	2.3	2.35	3.2	2.85	3.3	2.4	2.7	2.5	1.8	1.65	1.65
18	2.4	2.3	2.4	3.2	3.0	3.2	2.4	2.7	2.55	1.7	1.65	1.65
19	2.4	2.3	2.4	3.3	3.0	3.2	2.4	2.7	2.6	1.8	1.65	1.65
20	2.45	2.3	2.4	3.3	3.0	3.2	2.3	2.8	2.5	1.8	1.65	1.65
21	2.45	2.3	2.4	3.4	3.0	3.3	2.4	2.8	2.4	1.8	1.65	1.85
22	2.45	2.3	2.4	3.4	3.3	3.4	2.4	2.7	2.4	1.7	1.65	1.85
23	2.45	2.3	2.45	3.3	3.85	3.2	2.3	2.7	2.3	1.7	1.65	1.85
24	2.45	2.35	2.45	3.3	3.4	3.2	2.2	2.75	2.3	1.7	1.65	1.9
25	2.45	2.35	2.45	3.3	3.4	3.2	2.3	2.7	2.3	1.8	1.65	2.0
26	2.45	2.3	2.5	3.4	3.4	3.2	2.3	2.8	2.3	1.7	1.65	2.0
27	2.45	2.3	2.5	3.4	3.6	3.2	2.4	2.7	2.3	1.7	1.65	2.05
28	2.45	2.3	2.6	3.4	3.5	3.3	2.5	2.75	2.2	1.8	1.65	2.0
29	2.45	2.3	2.65	3.0	-----	3.3	2.5	3.0	2.2	1.8	1.65	2.05
30	2.4	2.3	2.7	2.7	-----	3.2	2.4	-----	2.3	1.7	1.65	1.95
31	2.4	-----	2.75	-----	-----	3.2	-----	2.8	-----	1.7	1.65	-----
1905-6.												
1	2.0	2.0	2.0	-----	-----	2.2	6.75	3.4	3.4	2.7	-----	-----
2	2.05	2.0	2.0	-----	-----	2.2	6.5	3.4	3.6	2.7	-----	-----
3	2.05	2.0	2.1	-----	-----	2.3	5.75	3.2	4.0	2.75	-----	-----
4	2.0	1.9	2.1	-----	-----	2.2	5.9	3.3	4.0	2.5	-----	-----
5	2.0	1.9	2.1	-----	-----	2.1	6.4	3.1	3.7	2.6	-----	-----
6	2.0	2.0	2.1	-----	-----	2.1	6.1	3.0	3.7	2.6	-----	-----
7	2.0	2.0	2.1	-----	-----	2.2	6.0	2.9	3.6	2.6	-----	-----
8	2.1	2.0	2.1	-----	-----	2.6	6.1	3.1	3.5	2.5	-----	-----
9	2.1	2.0	2.2	-----	-----	2.8	6.0	3.0	3.6	2.6	-----	-----
10	2.0	2.0	2.2	-----	-----	2.7	5.9	3.2	3.6	2.5	-----	-----
11	2.0	2.1	2.3	-----	-----	2.5	5.6	4.0	3.7	2.6	-----	-----
12	2.0	2.0	2.2	-----	-----	2.6	5.4	4.2	3.5	2.6	-----	-----
13	2.0	2.0	2.2	-----	-----	2.4	5.5	4.2	3.4	2.6	-----	-----
14	2.0	2.0	2.4	-----	-----	2.1	5.4	4.2	3.3	2.5	-----	-----
15	2.0	2.1	2.4	-----	-----	2.4	5.1	3.0	3.2	2.6	-----	-----
16	2.1	2.1	2.3	-----	-----	3.0	4.6	3.0	3.15	2.5	-----	-----
17	2.1	2.0	2.3	-----	-----	3.0	4.5	3.0	3.1	2.5	-----	-----
18	2.15	2.1	2.3	-----	-----	3.1	4.4	2.6	3.0	2.5	-----	-----
19	2.15	2.1	-----	-----	-----	2.9	4.4	2.75	3.0	-----	-----	-----
20	2.1	2.1	-----	-----	-----	3.1	4.4	2.6	3.0	-----	-----	-----
21	2.1	2.0	-----	-----	2.1	3.0	4.5	2.9	2.9	-----	-----	-----
22	2.1	2.0	-----	-----	2.15	2.6	4.6	3.0	2.9	-----	-----	-----
23	2.1	2.0	-----	-----	2.2	3.1	4.4	3.6	2.8	-----	-----	-----
24	2.1	1.9	-----	-----	2.2	5.8	4.5	3.7	2.6	-----	-----	-----
25	2.1	2.0	-----	-----	2.2	5.6	4.5	4.0	2.5	-----	-----	-----
26	1.9	2.1	-----	-----	2.1	5.2	4.0	4.1	3.1	-----	-----	-----
27	1.9	2.1	-----	-----	2.2	6.15	4.2	4.0	2.8	-----	-----	-----
28	2.1	2.1	-----	-----	2.1	5.6	4.0	4.1	2.8	-----	-----	-----
29	1.9	2.0	-----	-----	-----	6.0	3.6	4.0	2.75	-----	-----	-----
30	2.0	2.1	-----	-----	-----	5.5	3.5	3.4	2.8	-----	-----	-----
31	2.0	-----	-----	-----	-----	6.8	-----	3.7	-----	-----	-----	-----

NOTE.—No record of effect of ice.

Daily gage height, in feet, of Willow Creek near Brogan, Oreg., for 1910.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1	0.7	0.6	1.06	3.65	1.7	0.7	0.5	0.3	0.2
2	.7	.7	1.08	3.60	1.6	.7	.5	.3	.2
3	.7	.7	1.30	3.55	2.6	.7	.4	.2	.2
4	.7	.8	1.70	3.50	3.1	.6	.4	.2	.2
5	.7	.8	1.76	3.48	2.7	.6	.4	.2	.2
6	.7	.7	2.30	3.44	2.55	.6	.4	.2	.2
7	.7	.8	2.30	3.40	1.8	.6	.4	.2	.2
8	.7	.8	2.60	3.38	1.8	.6	.4	.2	.2
9	.8	.8	2.65	3.36	1.75	.6	.4	.2	.2
10	.8	.8	2.40	3.34	1.75	.6	.3	.2	.3
11	.8	.8	2.36	3.30	1.7	.5	.3	.2	.3
12	.8	.8	2.40	3.26	1.6	.5	.3	.2	.3
13	.8	.9	2.40	3.23	1.6	.5	.3	.2	.3
14	.8	.9	2.46	3.15	1.5	.5	.3	.2	.3
15	.8	.8	2.46	3.06	1.4	.5	.3	.2	.3
16	.8	.9	2.40	2.98	1.4	.5	.3	.2	.3
17	.8	.8	2.40	2.90	1.3	.5	.3	.2	.4
18	.7	.9	2.40	2.83	1.2	.5	.3	.2	.4
19	.8	.8	3.60	2.75	1.0	.5	.3	.2	.4
20	.8	.8	7.3	2.70	1.0	.5	1.0	.2	.4
21	.8	.9	6.0	2.65	1.0	.5	1.0	.2	.4
22	.7	.9	5.8	2.60	1.0	.5	.8	.2	.4
23	.8	.9	5.3	2.58	.8	.5	.5	.2	.4
24	.8	.9	5.0	2.55	.7	.5	.3	.2	.4
25	.8	.9	4.6	2.50	.7	.5	.3	.2	.4
26	.8	1.0	4.5	2.40	.7	.5	.3	.2	.4
27	.9	1.0	4.3	2.30	.7	.5	.3	.2	.4
28	.9	1.05	4.4	2.20	.7	.5	.3	.2	.4
29	.8	-----	3.8	2.00	.7	.5	.3	.2	.4
30	.8	-----	3.8	1.80	.7	.5	.3	.2	.4
31	.9	-----	3.7	-----	.7	-----	.3	.2	-----

Daily discharge, in second-feet, of Willow Creek near Brogan, Oreg., for 1904-1906 and 1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1904.							1904.						
1		332	68	17	0.5	0.5	16	148	24	4.0	0.5	3.0	
2		332	68	20	.5	.5	17	148	15	4.0	.5	3.0	
3		298	66	24	.5	.5	18	143	14	3.0	.5	3.0	
4		267	61	23	.5	.5	19	141	14	2.0	.5	3.0	
5		222	59	7.0	.5	.5	20	136	14	2.0	.5	3.0	
6		209	51	20	.5	.5	21	128	14	1.5	.5	3.0	
7		188	47	7.0	.5	.5	22	122	14	1.5	.5	3.0	
8		182	43	9.0	.5	.5	23	422	122	15	1.5	.5	3.0
9		182	41	11	.5	.5	24	116	15	1.2	.5	3.0	
10		168	43	7.0	.5	.5	25	100	15	.5	.5	3.0	
11		172	38	9.0	.5	.5	26	282	92	15	.5	.5	3.0
12		179	38	9.0	.5	1.5	27	267	88	15	.5	.5	3.0
13		177	41	9.0	.5	1.5	28	237	86	15	1.0	.5	3.0
14	954	180	32	9.0	.5	1.5	29	332	78	15	.7	.5	4.0
15	875	175	26	7.0	.5	1.5	30	316	73	15	.5	.5	4.0
							31	68	-----	.5	.5	-----	-----

Daily discharge, in second-feet, of Willow Creek near Brogan, Oreg., for 1904-1906 and 1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	4.0	11	7.0	33	18	94	53	27	42	14	1.0	0.0
2.....	3.0	13	7.0	39	18	89	61	33	39	14	1.0	.0
3.....	4.0	13	7.0	39	18	45	38	42	39	14	1.0	.0
4.....	4.0	13	7.0	45	22	54	28	27	33	18	.5	.0
5.....	5.0	13	7.0	39	18	89	19	33	27	18	.5	.0
6.....	5.0	12	7.0	45	22	98	27	33	27	14	1.0	.0
7.....	6.0	11	9.0	42	22	89	33	39	30	10	1.0	.0
8.....	6.0	11	11	42	22	98	39	45	27	10	.5	.0
9.....	7.0	11	11	42	22	89	42	42	24	6.0	.5	.0
10.....	7.0	9.0	11	45	22	98	42	39	22	6.0	.5	.0
11.....	9.0	9.0	11	45	27	81	42	39	23	3.0	.5	.0
12.....	7.0	9.0	11	45	27	96	39	33	24	1.0	.5	.0
13.....	11	9.0	11	45	45	106	39	39	26	1.0	.5	.0
14.....	7.0	7.0	11	45	58	119	39	45	27	1.0	.5	.0
15.....	11	7.0	9.0	73	58	166	27	33	27	1.0	.5	.0
16.....	11	7.0	9.0	73	58	118	27	39	27	1.0	.5	.0
17.....	11	7.0	9.0	73	48	70	22	39	27	1.0	.0	.0
18.....	11	7.0	11	73	58	61	22	39	30	.5	.0	.0
19.....	11	7.0	11	81	58	61	22	39	33	1.0	.0	.0
20.....	13	7.0	11	81	58	61	18	45	27	1.0	.0	.0
21.....	13	7.0	11	89	58	70	22	45	22	1.0	.0	1.5
22.....	13	7.0	11	89	81	79	22	39	22	.5	.0	1.5
23.....	13	7.0	13	81	131	61	18	39	18	.5	.0	1.5
24.....	13	9.0	13	81	89	61	14	42	18	.5	.0	3.0
25.....	13	9.0	13	81	89	61	18	39	18	1.0	.0	6.0
26.....	13	7.0	15	89	89	61	18	45	18	.5	.0	6.0
27.....	13	7.0	15	89	107	61	22	39	18	.5	.0	8.0
28.....	13	7.0	20	89	98	70	27	42	14	1.0	.0	6.0
29.....	13	7.0	23	58	.....	70	27	58	14	1.0	.0	8.0
30.....	11	7.0	26	39	.....	61	22	52	18	.5	.0	4.5
31.....	11	.....	29	18	.....	61	.....	45	.....	.5	.0	.....
1905-6.												
1.....	6	6	.....	.....	.....	14	665	56	56	16	.....	.....
2.....	8	6	.....	.....	.....	14	590	56	71	16	.....	.....
3.....	8	6	.....	.....	.....	18	382	43	104	18	.....	.....
4.....	6	3	.....	.....	.....	14	420	49	104	8	.....	.....
5.....	6	3	.....	.....	.....	10	560	37	79	12	.....	.....
6.....	6	6	.....	.....	.....	10	470	31	79	12	.....	.....
7.....	6	6	.....	.....	.....	14	445	26	71	12	.....	.....
8.....	10	6	.....	.....	.....	33	470	37	63	8	.....	.....
9.....	10	6	.....	.....	.....	45	445	31	71	12	.....	.....
10.....	6	6	.....	.....	.....	39	420	43	71	8	.....	.....
11.....	6	10	.....	.....	.....	27	345	104	79	12	.....	.....
12.....	6	6	.....	.....	.....	33	300	123	63	12	.....	.....
13.....	6	6	.....	.....	.....	22	320	123	56	12	.....	.....
14.....	6	6	.....	.....	.....	10	300	123	49	8	.....	.....
15.....	6	10	.....	.....	.....	22	240	31	43	12	.....	.....
16.....	10	10	.....	.....	.....	58	168	31	40	8	.....	.....
17.....	10	6	.....	.....	.....	58	156	31	37	8	.....	.....
18.....	12	10	.....	.....	.....	65	144	12	31	8	.....	.....
19.....	12	10	.....	.....	.....	51	144	18	31	.....	.....	.....
20.....	10	10	.....	.....	.....	65	144	12	31	.....	.....	.....
21.....	10	6	.....	.....	10	58	156	26	26	.....	.....	.....
22.....	10	6	.....	.....	12	33	168	31	26	.....	.....	.....
23.....	10	6	.....	.....	14	65	144	71	21	.....	.....	.....
24.....	10	3	.....	.....	14	511	156	79	12	.....	.....	.....
25.....	10	6	.....	.....	14	456	156	104	8	.....	.....	.....
26.....	3	10	.....	.....	10	362	104	113	37	.....	.....	.....
27.....	3	10	.....	.....	14	485	123	104	21	.....	.....	.....
28.....	10	10	.....	.....	10	345	104	113	21	.....	.....	.....
29.....	3	6	.....	.....	.....	445	71	104	18	.....	.....	.....
30.....	6	10	.....	.....	.....	320	63	56	21	.....	.....	.....
31.....	6	.....	.....	.....	.....	680	.....	79	.....	.....	.....	.....

Daily discharge, in second-feet, of Willow Creek near Brogan, Oreg., for 1904-1906 and 1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.												
1.....				8	7	16	124	12	3.0	2.0	1.0	0.5
2.....				8	8	18	120	10	3.0	2.0	1.0	.5
3.....				8	8	38	115	35	3.0	1.5	.5	.5
4.....				8	9	70	110	60	2.5	1.5	.5	.5
5.....				8	9	75	105	42	2.5	1.5	.5	.5
6.....				8	8	150	100	29	2.5	1.5	.....	.5
7.....				8	9	150	95	15	2.5	1.5	.5	.5
8.....				8	9	240	90	15	2.5	1.5	.5	.5
9.....				9	9	260	85	13	2.5	1.5	.5	.5
10.....				9	9	170	80	13	2.5	1.0	.5	1.0
11.....				9	9	160	74	12	2.0	1.0	.5	1.0
12.....				9	9	170	70	10	2.0	1.0	.5	1.0
13.....				9	10	170	67	10	2.0	1.0	.5	1.0
14.....				9	10	180	64	9	2.0	1.0	.5	1.0
15.....				9	9	180	60	8	2.0	1.0	.5	1.0
16.....				9	10	170	56	8	2.0	1.0	.5	1.0
17.....				9	9	170	52	7	2.0	1.0	.5	1.5
18.....				8	10	170	48	6	2.0	1.0	.5	1.5
19.....				9	9	640	44	5	2.0	1.0	.5	1.5
20.....				9	9	2,500	42	5	2.0	5.0	.5	1.5
21.....				9	10	600	39	5	2.0	5.0	.5	1.5
22.....				8	10	400	36	5	2.0	4.0	.5	1.5
23.....				9	10	310	34	4	2.0	2.0	.5	1.5
24.....				9	10	275	30	3	2.0	1.0	.5	1.5
25.....				9	10	220	27	3	2.0	1.0	.5	1.5
26.....				9	13	210	24	3	2.0	1.0	.5	1.5
27.....				10	13	190	22	3	2.0	1.0	.5	1.5
28.....				10	15	200	20	3	2.0	1.0	.5	1.5
29.....				9	.....	140	17	3	2.0	1.0	.5	1.5
30.....				9	.....	140	15	3	2.0	1.0	.5	1.5
31.....				10	.....	130	.....	3	.....	1.0	.5	.....

NOTE.—Daily discharge determined from four fairly well defined rating curves applicable as follows: 1904: Jan. 1 to Mar. 13, 1905, and Apr. 6, 1905, to Mar. 26, 1906; Mar. 14 to Apr. 5, 1905; and Mar. 27 to July 18, 1906. Estimates for 1910 furnished by the Willow River Land & Irrigation Co.

Monthly discharge of Willow Creek near Brogan, Oreg., for 1904-1906 and 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
January.....			a 10	615	D.
February.....			a 221	12,700	D.
March.....			a 783	48,100	D.
April.....			a 624	37,100	D.
May.....	332	68	163	10,000	B.
June.....	68	14	31.7	1,890	B.
July.....	24	.5	6.87	422	C.
August.....	.5	.5	.50	31	C.
September.....	4	.5	1.95	116	C.
The period.....				111,000	
1904-5.					
October.....	13	3	9.42	579	C.
November.....	13	7	8.90	530	C.
December.....	29	7	12.2	750	D.
January.....	89	18	59.6	3,660	D.
February.....	131	18	51.5	2,860	B.
March.....	166	45	80.5	4,950	B.
April.....	61	14	29.6	1,760	B.
May.....	58	27	39.8	2,450	B.
June.....	42	14	25.4	1,510	B.
July.....	18	.5	4.6	283	D.
August.....	1	.0	.34	21	D.
September.....	8	.0	1.5	89	D.
The year.....	166	.0	26.9	19,400	

a Estimated.

Monthly discharge of Willow Creek near Brogan, Oreg., for 1904-1906 and 1910—Cont'd.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....	12	3	7.3	449	C.
November.....	10	3	7.0	417	C.
December.....			a 5.0	307	D.
January.....			a 6.0	369	D.
February.....	14		a 9.0	500	D.
March.....	680	10	141	8,670	B.
April.....	665	63	279	16,800	B.
May.....	123	12	61.2	3,760	B.
June.....	104	8	48.0	2,860	B.
July 1-18.....	18	8	11.2	400	C.
The period.....				34,300	
1910.					
January.....	10	8	9.0	553	
February.....	15	7	9.6	553	
March.....	2,500	16	274	16,800	
April.....	124	15	62.2	3,700	
May.....	60	3.0	11.7	719	
June.....	3.0	2.0	2.2	131	
July.....	5.0	1.0	1.5	92	
August.....	1.0	.5	.5	31	
September.....	1.5	.5	1.1	66	
The period.....				22,600	

a Estimated.

CANALS IN MALHEUR RIVER BASIN.

Systematic measurements of diversions from Malheur River were begun by the United States Reclamation Service in June, 1904, and continued until the end of the irrigating season of 1905. Sufficient measurements and readings on temporary gages were made to afford a basis for the estimate of total diversions given in the table on page 149. Values for any one canal are liable to considerable error, but the total is believed to be fairly reliable. Considerable water was probably diverted in October and November, 1904, though no record was kept after September 30.

Discharge measurements of Vines ditch above Vale, Oreg., in 1904 and 1905.

Date.	Dis- charge.	Date.	Dis- charge.	Date.	Dis- charge.
1904.		1905.		1905.	
June 29.....	Sec.-ft. 1.23	June 14.....	Sec.-ft. 3.7	October 12.....	Sec.-ft. 1.7
September 23.....	.60	28.....	1.3	November 6.....	.9
August 5.....	.32	September 30.....	1.0		

NOTE.—Measured $1\frac{1}{2}$ miles below the headgate, which is situated in the SW. $\frac{1}{4}$ sec. 8, T. 19 S., R. 43 E., 14 miles above Vale, on right bank of Malheur River, and 1 mile above mouth of Malheur Canyon. Ditch carried water May 20 to Sept. 30, 1904, May 15 to July 14, 1905, and Sept. 25 to Nov. 6, 1905.

Discharge measurements of Malheur Farmers' canal above Vale, Oreg., in 1904 and 1905.

Date.	Dis- charge.	Date.	Dis- charge.	Date.	Dis- charge.
1904.		1904.		1905.	
June 24.....	Sec.-ft. 54.0	September 23.....	Sec.-ft. 5.0	June 27.....	Sec.-ft. 17.4
July 5.....	33.3			July 12.....	27.6
27.....	16.6	May 5.....	83.6	September 30.....	16.7
August 5.....	11.4	16.....	50.8	November 6.....	10.5

NOTE.—Measured a short distance below waste gate. Headgate is situated in the S. $\frac{1}{4}$ sec. 33, T. 18 S., R. 43 E., 13 miles above Vale, on left bank of Malheur River. Water being diverted May 23 to Aug. 8, and Sept. 15-30, 1904; Apr. 20 to July 14, and Sept. 25 to Nov. 6, 1905.

Discharge measurements of "J. II." ditch above Vale, Oreg., in 1904 and 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
1904.		1905.		1905.	
	<i>Sec.-ft.</i>		<i>Sec.-ft.</i>		<i>Sec.-ft.</i>
June 25.....	8.3	May 16.....	7.7	September 2.....	1.0
July 6.....	9.6	June 15.....	11.1	30.....	.6
22.....	8.7	28.....	6.4	October 12.....	.8
August 5.....	7.1	July 12.....	.3		

NOTE.—Measured half a mile below headgate, which is situated in the NE. $\frac{1}{4}$ sec. 4, T. 19 S., R. 43 E., 1 mile below mouth of canyon, 12 miles above Vale, and is used in common with McLaughlin ditch. Water being diverted May 5 to Aug. 8, 1904, and May 10 to July 14, and Sept. 1 to Oct. 12, 1905.

Discharge measurements of McLaughlin ditch above Vale, Oreg., in 1904 and 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
1904.		1905.		1905.	
	<i>Sec.-ft.</i>		<i>Sec.-ft.</i>		<i>Sec.-ft.</i>
June 25.....	10.8	May 16.....	19.2	August 12.....	2.7
July 6.....	10.2	June 14.....	4.2	22.....	2.5
22.....	6.2	28.....	8.7	September 2.....	1.5
August 25.....	2.1	July 12.....	5.6	30.....	.7
September 23.....	13.2	28.....	7.1	October 12.....	.5
		August 3.....	4.0	November 6.....	.5

NOTE.—Measured at the dividing flume, one-fourth mile below headgate, which is situated in NE. $\frac{1}{4}$ sec. 4, T. 19 S., R. 43 E., and is used in common with "J. H." ditch. Water being diverted May 5 to Sept. 30, 1904, and May 10 to Nov. 6, 1905.

Discharge measurements of Gillerman & Froman ditch above Vale, Oreg., in 1904 and 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
1904.		1905.		1905.	
	<i>Sec.-ft.</i>		<i>Sec.-ft.</i>		<i>Sec.-ft.</i>
June 25.....	13.5	May 5.....	64.7	June 27.....	25.6
July 30.....	4.5	15.....	70.7	July 12.....	8.6
September 23.....	1.6	June 12.....	42.8	October 12.....	1.1

NOTE.—Measured at Ricker's ranch. Headgate of ditch is situated in SE. $\frac{1}{4}$ sec. 8, T. 19 S., R. 44 E., 8 miles above Vale, on right bank of Malheur River. Water being diverted Apr. 1 to Sept. 30, 1904, and May 5 to July 14, 1905.

Discharge measurements of Sand Hollow ditch above Vale, Oreg., in 1904 and 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
1904.		1905.		1905.	
	<i>Sec.-ft.</i>		<i>Sec.-ft.</i>		<i>Sec.-ft.</i>
June 29.....	12.4	May 17.....	12.6	July 13.....	3.3
July 30.....	5.6	June 16.....	6.4	October 12.....	5.8
August 9.....	2.9	29.....	7.5	November 16.....	6.1
September 23.....	6.0				

NOTE.—Measured at High's ranch. Ditch takes out on right bank of Malheur River, in sec. 15, T. 19 S., R. 44 E., 6 miles above Vale. Water being diverted Apr. 12 to July 9 and Aug. 15 to Sept. 30, 1904; May 4 to July 14, 1905.

Discharge measurements of Hoop Mill ditch at Vale, Oreg., in 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
	<i>Sec.-ft.</i>		<i>Sec.-ft.</i>		<i>Sec.-ft.</i>
May 1.....	12.3	June 27.....	8.2	October 12.....	5.2
June 10.....	9.9	July 8.....	.8	November 4.....	5.6

NOTE.—Measured just above Bully Creek crossing. Headgate situated on left bank of Malheur River in SW. $\frac{1}{4}$ sec. 31, T. 18 S., R. 45 E., 2 miles above Vale. Water being diverted Apr. 8 to July 10, 1905. Water of this ditch formerly used and returned to river by a mill one-half mile south of Vale.

Discharge measurements of Nevada ditch below Vale, Oreg., in 1904 and 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
1904.	<i>Sec.-ft.</i>	1905.	<i>Sec.-ft.</i>	1905.	<i>Sec.-ft.</i>
July 12.....	107.0	April 25.....	48.7	August 11.....	16.9
20.....	64.1	May 25.....	69.3	17.....	13.7
August 6.....	46.5	June 7.....	99.9	29.....	14.3
23.....	43.0	July 13.....	24.0	September 16.....	25.9
September 7.....	34.0	21.....	34.7	24.....	37.5
8.....	18.2	29.....	27.6	October 4.....	39.2
24.....	49.9	August 4.....	22.5	10.....	37.2

NOTE.—Measured 1,000 feet below headgate, which is situated on right bank of Malheur River, in the SW. $\frac{1}{4}$ sec. 21, T. 18 S., R. 45 E., 1 mile below Vale. Water being diverted May 1 to Sept. 24, 1904, and Apr. 18 to Oct. 10, 1905.

Discharge measurements of wasteways of Nevada ditch in 1905.

McGregor Wasteway below Vale, Oreg.

Date.	Discharge.	Date.	Discharge.
	<i>Second-feet.</i>		<i>Second-feet.</i>
May 18.....	0.9	October 4.....	15.9
June 21.....	24.3	14.....	.3

Cotton Wasteway above Ontario, Oreg.

May 10.....	41.3	October 4.....	1.2
June 21.....	.9	15.....	.5

Monthly run-off, in acre-feet, of canals diverting from Malheur River near Vale, Oreg., for 1904-5.

Ditch.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Season.
1904.								
Vines.....	0	36	70	30	20	30	.....	186
Malheur farmers.....	0	250	2,860	1,420	175	150	.....	4,860
J. H.....	0	375	475	555	110	0	.....	1,520
McLaughlin.....	0	515	655	490	615	750	.....	3,020
Gillerman & Froman.....	895	820	835	460	185	120	.....	3,320
Sand Hollow.....	375	715	430	65	150	0	.....	1,740
Nevada.....	0	3,690	5,650	5,220	2,760	1,390	.....	18,700
Total.....	1,270	6,400	11,000	8,240	4,020	2,440	.....	33,300
Total above Vale.....	1,270	2,710	5,320	3,020	1,260	1,050	.....	14,600
1905.								
Vines.....	0	126	176	21	0	14	80	417
Malheur Farmers.....	1,840	3,620	1,600	636	0	200	840	8,790
J. H.....	0	486	717	63	0	48	20	1,330
McLaughlin.....	0	746	570	406	169	62	33	1,990
Linebarger <i>a</i>	0	192	62	0	0	0	0	254
Gillerman & Froman.....	0	3,860	2,550	392	0	0	0	6,800
Sand Hollow.....	0	664	451	141	0	0	0	1,260
Hope Mill.....	640	707	548	50	0	0	0	1,950
Nevada.....	607	4,000	4,730	2,040	1,030	1,730	762	14,900
Total.....	3,090	14,400	11,400	3,800	1,200	2,050	1,740	37,700
Total above Vale.....	2,480	10,400	6,670	1,760	169	324	973	22,800

a Estimated, for measurement, see p. 808.

POWDER RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Powder River, which drains the eastern slope of the Blue Mountains, rises in the extreme western part of Baker County, flows west, then north through Baker to the town of North Powder, where it turns abruptly to the southeast. It joins Snake River in the east central part of Baker County.

The most important tributary stream is Eagle Creek, which drains the southern part of the Wallowa Mountains and enters the Powder near its mouth. The general elevation of the headwaters is 6,000 feet above sea level; that of the valley is 3,300 feet. Sumpter is 4,415 feet above sea level, and Baker 3,586 feet. The total drainage area of Powder River at the mouth is 1,660 square miles; at Baker it is 341 square miles.

The headwater country is mountainous and heavily forested and the principal industry is mining and lumbering. The valley of the Powder has not been greatly developed, although a number of irrigation ditches are in operation. Any extensive development will involve the construction of storage reservoirs, sites for which are not lacking.

The mean annual rainfall at Baker is 13 inches; in the headwater region it is probably twice that amount, the greater part falling during the winter in the form of snow. The determination of stream flow in this area is rendered somewhat difficult during the winter as the streams are icebound for weeks at a time.

The lowest run-off from this basin since records have been kept occurred in 1905; the highest occurred in 1904, but that of 1910 was nearly as high.

POWDER RIVER AT SALISBURY,¹ OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 30, T. 10 S., R. 39 E., at Salisbury station on Sumpter Valley Railroad, 10 miles above Baker.

Records presented.—December 20, 1903, to September 30, 1910.

Drainage area.—230 square miles.

Gage.—Vertical staff. Gage heights for 1910 refer to a datum 0.56 foot higher than that for previous years.

Channel.—Gravel; somewhat shifting.

Discharge measurements.—Made from wagon bridge or by wading.

Winter flow.—River freezes deeply three or four months each winter.

Diversions.—Most of low-water flow is diverted for irrigating small tracts along river above station.

Accuracy.—Results fair. Marked diurnal fluctuation during spring, when snow is melting, decreases the accuracy.

¹ Referred to in earlier reports as near Baker City, Oreg.

Discharge measurements of Powder River at Salisbury, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903. Dec. 20..	J. H. Lewis.....	<i>Feet.</i> 2.24	<i>Sec. ft.</i> 35	1906. Apr. 23	R. S. Hall.....	<i>Feet.</i> 4.55	<i>Sec. ft.</i> 655
1904. Mar. 16	J. H. Lewis.....	2.95	162	May 14	do.....	3.60	321
May 7	W. C. Sawyer.....	4.30	572	June 12	do.....	3.42	297
May 11	Murphy and Sawyer.....	4.56	660	Nov. 30 ^a	Stevens and McGlashan	2.38	25
July 2	W. C. Sawyer.....	2.92	133	1907. Apr. 29	I. E. Oakes.....	3.71	326
Sept. 22	do.....	1.74	7.9	1908. May 30	H. D. McGlashan.....	3.00	187
Dec. 6 ^a	do.....	2.15	18.4	1909. Mar. 11	H. D. McGlashan.....	2.45	75
1905. Mar. 28	W. C. Sawyer.....	2.94	151	May 11	do.....	2.05	29
May 23	do.....	3.10	172	July 15	R. B. Post.....	2.22	45
Aug. 1	do.....	1.91	15.3	Oct. 10	F. F. Henshaw.....	1.91	^b 13.4
Nov. 13 ^a	R. S. Hall.....	2.11	11.3	1910. Mar. 15	L. R. Allen.....	3.53	484
1906. Mar. 9 ^a	R. S. Hall.....	2.25	45	Sept. 18	F. C. Ebert.....	1.32	6.5
May 9 ^a	do.....	2.28	48				
Apr. 14	do.....	3.80	368				

^a Ice present.^b Includes 0.5 second-foot diverted around gage.

Daily gage height, in feet, of Powder River at Salisbury, Oreg., for 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....				2.24	2.40	2.75	3.15	4.45	4.45	2.95	2.25	2.15
2.....				2.24	2.45	2.70	3.20	4.55	4.30	2.95	2.20	2.05
3.....				2.24	2.44	2.80	3.35	4.45	4.40	2.90	2.20	2.05
4.....				2.24	2.45	2.40	3.60	4.60	4.35	2.80	2.20	2.00
5.....				2.24	2.42	2.48	3.45	4.55	4.30	2.90	2.15	2.00
6.....				2.24	2.45	2.75	4.35	4.45	4.50	2.75	2.10	1.95
7.....				2.24	2.48	3.40	4.35	4.40	4.50	2.85	2.15	1.95
8.....				2.24	2.40	3.20	4.80	4.45	4.25	2.85	2.15	1.95
9.....				2.24	2.52	2.95	5.30	4.35	4.35	2.90	2.15	1.90
10.....				2.24	2.62	3.05	5.40	4.45	4.10	2.75	2.10	1.90
11.....				2.24	2.58	3.00	6.15	4.55	3.95	2.70	2.05	1.90
12.....				2.24	2.68	2.90	6.90	4.55	3.75	2.65	2.10	1.85
13.....				2.24	2.78	2.85	6.45	4.60	3.80	2.60	2.10	1.90
14.....				2.24	2.65	4.20	7.30	4.50	3.80	2.60	2.05	1.85
15.....				2.24	2.75	3.05	7.10	4.50	3.85	2.55	2.05	1.85
16.....				2.24	3.00	2.90	6.35	4.60	3.95	2.50	2.00	1.70
17.....				2.24	2.92	3.20	5.85	4.65	3.90	2.45	1.85	1.70
18.....				2.24	3.00	2.90	5.70	4.70	3.80	2.50	1.85	1.65
19.....				2.24	2.95	2.70	5.65	4.45	3.80	2.40	1.70	1.45
20.....			2.24	2.24	3.10	3.10	6.20	4.45	3.65	2.35	1.75	1.30
21.....			2.24	2.24	3.15	2.85	5.40	4.70	3.50	2.40	1.75	1.85
22.....			2.25	2.24	3.50	2.80	4.30	5.15	3.40	2.35	1.75	1.80
23.....			2.25	2.24	3.15	3.40	4.85	5.40	3.25	2.30	2.15	1.90
24.....			2.24	2.40	3.35	2.85	4.55	4.55	3.25	2.35	2.05	2.00
25.....			2.24	2.34	3.20	2.75	4.35	4.65	3.10	2.30	2.10	2.00
26.....			2.25	2.36	3.17	2.70	4.57	4.55	3.05	2.30	2.15	2.10
27.....			2.24	2.40	3.25	2.50	4.70	4.45	3.05	2.35	2.15	2.05
28.....			2.24	2.39	2.95	2.60	5.10	4.50	2.90	2.25	2.20	2.00
29.....			2.24	2.35	2.95	3.00	5.55	4.50	2.80	2.25	2.20	2.00
30.....			2.24	2.42	2.95	2.95	4.90	4.50	2.95	2.30	2.20	1.95
31.....			2.24	2.42	2.95	2.95	4.50	4.50	2.25	2.25	2.30	1.95

Daily gage height, in feet, of Powder River at Salisbury, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.	1.8	2.15	2.1	2.15	2.15	2.7	2.85	3.35	3.55	2.45	2.05	1.65
2.	1.75	2.15	2.05	2.05	2.1	2.6	2.85	3.4	3.45	2.55	2.0	1.65
3.	1.8	2.15	2.0	1.95	2.1	2.7	2.95	3.4	3.45	2.45	1.9	1.6
4.	1.85	2.1	1.95	2.0	2.25	3.0	3.05	3.25	3.45	2.35	1.85	1.7
5.	1.85	2.15	1.9	2.0	2.25	2.95	2.95	3.15	3.45	2.25	1.8	1.6
6.	1.8	2.1	2.15	2.0	2.05	3.05	2.95	3.05	3.3	2.15	1.8	1.55
7.	1.85	2.1	2.2	2.0	2.15	3.05	3.15	3.25	3.2	1.95	1.8	1.55
8.	1.75	2.05	2.15	1.95	2.2	2.95	3.35	3.25	3.25	1.9	1.85	1.6
9.	1.8	2.0	2.2	1.9	2.15	2.95	3.35	3.15	3.25	1.75	1.75	1.6
10.	1.9	2.0	2.15	1.9	2.05	3.05	3.25	3.05	3.15	1.95	1.85	1.6
11.	2.15	2.05	1.95	1.9	2.0	3.0	3.15	3.05	3.1	2.15	1.85	1.55
12.	2.25	2.05	1.95	1.9	2.15	3.3	3.2	3.05	3.05	2.0	1.85	1.55
13.	2.2	2.0	2.0	1.9	2.15	3.35	3.05	3.05	3.0	2.05	1.8	1.55
14.	2.15	2.0	2.05	1.9	2.25	3.25	3.05	3.0	3.05	2.05	1.85	1.55
15.	2.15	2.0	2.15	1.9	2.25	3.45	3.15	2.95	3.05	2.05	1.85	1.55
16.	2.15	2.05	2.05	2.0	2.25	3.45	3.05	3.05	2.95	2.05	1.8	1.55
17.	2.15	2.0	2.05	2.15	2.3	3.45	3.15	3.25	2.85	2.0	1.85	1.6
18.	2.25	2.0	2.15	2.25	2.35	3.35	3.05	3.35	2.85	2.05	1.75	1.55
19.	2.35	2.05	2.15	2.35	2.25	3.25	3.15	3.25	2.75	1.85	1.75	1.55
20.	2.3	2.05	2.1	2.25	2.25	3.15	3.1	3.25	2.85	1.85	1.7	1.6
21.	2.25	2.05	2.1	2.35	2.25	3.15	3.1	3.25	2.75	1.95	1.65	1.6
22.	2.3	2.1	2.1	2.35	2.3	3.15	3.1	3.25	2.6	1.95	1.65	1.75
23.	2.15	2.1	2.1	2.4	2.4	3.1	3.1	3.10	2.65	2.05	1.6	1.7
24.	2.15	2.1	2.15	2.3	2.35	3.15	3.2	3.15	2.65	2.0	1.65	1.65
25.	2.15	2.15	2.05	2.45	2.25	3.05	3.25	3.05	2.65	1.85	1.7	1.65
26.	2.15	2.15	1.95	2.35	2.35	2.95	3.4	3.05	2.6	1.9	1.65	1.75
27.	2.2	2.1	2.0	2.35	2.55	2.9	3.45	3.1	2.55	1.9	1.6	1.65
28.	2.2	2.1	2.0	2.2	2.4	2.9	3.45	3.15	2.55	1.85	1.65	1.75
29.	2.1	2.1	2.0	2.15	-----	2.85	3.35	3.0	2.6	1.85	1.65	1.75
30.	2.15	2.1	2.05	2.2	-----	2.85	3.45	3.15	2.45	1.9	1.65	1.95
31.	2.15	-----	2.15	2.15	-----	2.65	-----	3.35	-----	2.05	1.6	-----
1905-6.												
1.	1.95	2.05	2.1	2.1	2.05	2.15	4.05	4.15	3.35	2.65	2.0	1.8
2.	1.95	2.1	2.05	2.1	2.05	2.15	4.2	4.05	3.25	2.55	2.05	1.75
3.	1.85	2.05	2.0	2.05	2.1	2.15	3.55	4.15	3.3	2.6	1.85	1.75
4.	2.05	2.05	2.05	2.05	2.1	2.15	3.65	4.25	3.4	2.45	1.85	1.75
5.	1.95	2.05	2.1	2.05	2.1	2.15	4.3	4.15	3.5	2.4	1.8	1.75
6.	1.95	2.0	2.1	2.05	2.15	2.15	4.95	3.75	3.5	2.35	1.9	1.7
7.	2.0	2.1	2.1	2.05	2.15	2.15	5.0	4.05	3.4	2.35	1.85	1.75
8.	2.05	2.05	2.05	2.05	2.15	2.2	4.5	4.05	3.4	2.35	1.9	1.75
9.	2.0	2.05	2.05	2.1	2.2	2.2	4.25	4.05	3.3	2.3	1.85	1.8
10.	2.05	2.05	2.0	2.1	2.2	2.25	4.1	3.85	3.4	2.25	1.8	1.7
11.	2.05	2.05	2.1	2.1	2.2	2.15	4.2	3.7	3.35	2.25	1.85	1.8
12.	2.05	2.0	2.1	2.1	2.2	2.1	3.95	3.7	3.45	2.25	1.85	1.85
13.	2.05	2.1	2.1	2.1	2.2	2.1	3.9	3.65	3.4	2.3	1.75	1.75
14.	1.85	2.1	2.1	2.05	2.25	2.2	4.05	3.55	3.35	2.25	1.7	1.8
15.	2.0	2.0	2.1	2.05	2.25	2.25	4.15	3.35	3.25	2.3	1.75	1.75
16.	1.95	2.0	2.1	2.05	2.3	2.25	4.25	3.4	3.35	2.25	1.7	1.75
17.	2.0	2.05	2.05	2.0	2.35	2.2	4.05	3.15	3.35	2.2	1.65	1.75
18.	1.95	2.1	2.05	2.0	2.35	2.25	4.15	3.05	3.25	2.1	1.65	1.75
19.	1.95	2.1	2.05	2.1	2.35	2.35	3.95	3.05	3.25	2.1	1.65	1.75
20.	1.95	2.05	2.1	2.15	2.4	2.45	4.05	3.15	3.05	2.05	1.75	1.75
21.	2.1	2.0	2.1	2.15	2.45	2.4	4.05	3.15	3.15	2.1	1.8	1.7
22.	2.1	2.0	2.1	2.15	2.45	2.45	4.7	3.15	3.1	2.05	1.75	1.75
23.	2.05	2.05	2.1	2.1	2.45	2.45	4.55	3.15	3.05	3.1	1.85	1.75
24.	2.05	2.1	2.1	2.1	2.4	2.65	4.45	3.05	2.95	2.05	1.85	1.75
25.	2.0	2.05	2.0	2.1	2.25	3.0	4.25	3.05	3.1	2.0	1.75	1.7
26.	2.05	2.05	2.0	2.1	2.2	3.15	4.1	3.15	3.15	2.05	1.75	1.75
27.	2.0	2.05	2.0	2.1	2.1	3.5	3.6	3.1	3.05	2.05	1.7	1.75
28.	2.1	2.05	2.0	2.15	2.15	3.5	3.55	3.25	2.95	2.05	1.8	1.8
29.	2.1	2.1	2.05	2.15	-----	3.6	3.45	3.15	2.85	2.0	1.75	1.8
30.	2.05	2.1	2.1	2.1	-----	4.2	3.95	3.15	2.7	1.9	1.75	1.7
31.	2.05	-----	2.1	2.1	-----	4.55	-----	3.25	-----	1.9	1.75	-----

Daily gage height, in feet, of Powder River at Salisbury, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1.8	1.95	2.5	2.45	2.7	3.15	3.45	4.25	4.2	3.05	2.35	1.95
2.....	1.75	2.0	2.35	2.4	2.75	3.1	3.35	4.15	4.05	2.95	2.3	1.9
3.....	1.7	2.1	2.35	2.35	2.75	3.15	3.55	4.1	3.95	2.95	2.25	1.85
4.....	1.75	2.15	2.45	2.3	2.65	3.05	3.55	3.95	3.85	3.0	2.2	1.85
5.....	1.8	2.25	2.45	2.4	3.35	2.9	3.45	4.0	3.7	3.0	2.2	1.8
6.....	1.75	2.25	2.45	2.4	3.65	3.1	3.6	4.05	3.65	3.05	2.15	1.8
7.....	1.8	2.2	2.5	2.35	3.45	3.1	4.0	4.05	3.45	2.85	2.1	1.95
8.....	1.8	2.3	2.5	2.35	3.15	3.1	4.45	4.15	3.15	2.85	2.15	1.95
9.....	1.7	2.25	2.45	2.4	3.15	3.2	4.3	4.25	3.05	2.85	2.15	1.95
10.....	1.75	2.2	2.45	2.4	3.15	3.2	4.4	4.35	3.25	2.75	2.15	2.0
11.....	1.75	2.25	2.55	2.4	3.1	3.15	4.55	4.15	3.5	2.65	2.1	2.0
12.....	1.75	2.35	2.45	2.3	3.25	3.05	4.85	4.05	3.75	2.75	2.05	1.85
13.....	1.8	2.35	2.45	2.3	3.15	3.15	5.05	4.2	3.4	2.85	2.05	1.85
14.....	1.75	2.25	2.55	2.35	3.05	3.05	5.05	4.3	3.05	2.75	2.0	1.9
15.....	1.75	2.15	2.5	2.35	3.05	3.15	4.95	4.55	3.05	2.7	2.1	1.85
16.....	1.85	2.05	2.65	2.35	3.15	3.15	4.75	4.45	3.05	2.6	2.05	1.9
17.....	1.85	2.05	2.65	2.35	3.15	3.1	4.45	4.55	2.95	2.65	2.05	1.85
18.....	1.8	2.05	2.65	2.45	3.25	3.6	4.25	4.8	2.85	2.75	2.0	1.9
19.....	1.7	1.95	2.45	2.45	3.5	4.15	4.05	4.75	2.75	2.65	1.95	1.9
20.....	1.8	2.10	2.3	2.4	3.75	4.25	4.0	4.65	2.7	2.55	1.95	1.9
21.....	1.8	2.15	2.35	2.35	3.65	4.1	4.05	4.4	2.9	2.55	1.95	1.85
22.....	1.8	2.25	2.45	2.3	3.55	3.85	4.15	4.05	2.95	2.45	1.9	1.85
23.....	1.8	2.3	2.45	2.4	3.65	3.8	4.25	3.85	3.05	2.5	1.95	1.9
24.....	1.9	2.4	2.5	2.4	3.7	3.6	4.35	3.8	2.95	2.45	1.95	1.85
25.....	1.95	2.3	2.6	2.3	4.1	3.65	4.2	4.05	2.95	2.45	1.95	1.8
26.....	1.95	2.3	2.65	2.45	3.95	3.55	4.1	4.1	2.95	2.35	1.95	1.8
27.....	1.95	2.3	2.65	2.55	3.55	3.45	3.95	4.15	2.95	2.3	1.9	1.9
28.....	1.9	2.25	2.55	2.55	3.25	3.15	3.85	4.25	2.95	2.25	1.85	1.9
29.....	1.9	2.3	2.45	2.6	-----	3.1	3.95	4.2	2.9	2.2	1.8	1.8
30.....	1.85	2.4	2.45	2.65	-----	3.1	4.15	4.15	-----	2.2	1.85	1.9
31.....	1.85	-----	2.4	2.7	-----	3.25	-----	4.25	-----	2.15	1.85	-----
1907-8.												
1.....	1.9	1.95	2.25	-----	2.15	2.45	3.05	4.15	3.15	2.75	2.1	1.1
2.....	1.85	1.95	2.25	-----	2.15	2.5	3.1	4.05	3.2	2.65	2.15	1.2
3.....	2.0	2.0	2.25	-----	2.25	2.5	3.2	4.0	3.25	2.65	2.1	1.15
4.....	2.05	2.0	2.2	-----	2.25	2.5	3.25	3.95	3.5	2.55	2.05	1.15
5.....	2.05	1.9	2.15	2.05	2.3	2.4	3.35	3.85	3.3	2.55	2.0	1.1
6.....	2.0	1.9	2.1	2.05	2.25	2.35	3.35	3.85	3.15	2.65	2.1	1.15
7.....	1.95	1.85	2.15	2.05	2.25	4.45	3.4	4.05	3.15	2.65	2.05	1.15
8.....	1.95	1.85	2.15	2.05	2.3	2.5	3.5	4.15	3.15	2.7	2.0	1.15
9.....	1.95	1.85	2.25	2.1	2.15	2.4	3.65	3.45	3.15	2.75	1.9	1.2
10.....	1.95	1.85	2.25	2.05	2.15	2.45	3.7	3.15	3.15	2.85	1.8	1.15
11.....	1.9	1.95	2.25	2.05	2.2	2.55	3.75	3.15	3.35	2.85	1.75	1.1
12.....	1.9	1.95	2.35	2.1	2.2	2.5	3.85	3.1	3.25	2.95	1.7	1.0
13.....	1.85	1.95	2.35	2.1	2.25	2.6	3.9	3.15	3.35	2.95	1.65	1.1
14.....	1.85	2.05	2.25	2.05	2.25	2.65	4.05	3.15	3.45	2.85	1.6	1.25
15.....	1.8	2.05	2.25	2.05	2.3	3.2	4.15	3.05	3.4	2.75	1.55	1.35
16.....	1.85	2.05	2.2	2.15	2.3	4.3	4.25	3.05	3.25	2.65	1.45	1.35
17.....	1.9	2.05	2.15	2.15	2.35	3.85	4.05	3.05	3.25	2.65	1.45	1.4
18.....	1.85	2.05	2.2	2.2	2.35	3.8	3.8	3.15	3.4	2.55	1.45	1.55
19.....	1.85	2.05	2.2	2.25	2.35	3.7	3.95	3.25	3.35	2.45	1.45	1.85
20.....	1.85	2.15	2.2	2.25	2.4	3.7	4.05	3.15	3.25	2.35	1.35	1.85
21.....	1.9	2.15	2.15	2.25	2.4	3.7	4.35	3.15	3.3	2.35	1.35	1.85
22.....	1.95	2.15	2.25	2.15	2.4	3.55	4.25	3.1	3.35	2.35	1.35	1.8
23.....	1.95	2.15	2.35	2.15	2.4	3.45	4.15	3.05	3.4	2.35	1.3	1.75
24.....	2.0	2.05	2.35	2.15	2.45	3.5	4.05	3.05	3.3	2.45	1.25	1.7
25.....	1.95	2.05	2.4	2.2	2.5	3.3	3.85	3.15	3.25	2.45	1.2	1.7
26.....	2.0	2.05	2.4	2.25	2.5	3.15	3.75	3.15	3.2	2.35	1.2	1.65
27.....	2.0	2.1	2.3	2.25	2.45	3.1	3.85	3.05	3.15	2.3	1.15	1.65
28.....	2.0	2.2	2.25	2.25	2.45	3.0	3.9	3.05	3.1	2.2	1.1	1.65
29.....	1.95	2.2	2.25	2.25	2.35	3.0	4.05	2.95	3.1	2.15	1.1	1.65
30.....	2.0	2.25	2.35	2.25	-----	2.85	4.15	3.0	2.95	2.1	1.05	1.65
31.....	2.0	-----	2.35	2.1	-----	2.9	-----	3.15	-----	2.0	1.0	-----

Daily gage height, in feet, of Powder River at Salisbury, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	1.9	2.3	2.05	2.05	2.6	2.45	3.0	3.15	4.35	2.4	2.0	1.15
2.....	1.8	2.25	2.1	2.1	2.6	2.35	3.45	3.15	4.45	2.3	2.0	1.3
3.....	1.8	2.25	2.0	2.05	2.45	2.35	3.3	3.3	4.35	2.35	1.95	1.4
4.....	1.9	2.25	2.1	2.0	2.35	2.45	3.15	3.45	4.15	2.35	1.95	1.35
5.....	2.0	2.35	2.15	1.95	2.35	2.45	3.35	3.55	4.25	2.4	1.85	1.3
6.....	2.0	2.35	2.15	1.95	2.25	2.35	3.25	3.5	4.35	2.35	1.85	1.35
7.....	1.9	2.3	2.1	1.85	2.25	2.35	3.15	3.7	4.25	2.4	1.8	1.35
8.....	1.9	2.15	2.1	1.85	2.2	2.45	3.05	3.55	4.25	2.35	1.9	1.35
9.....	1.8	2.0	2.15	1.85	2.2	2.35	3.0	3.65	4.1	2.25	1.9	1.35
10.....	1.9	1.9	2.1	1.8	2.3	2.25	3.0	3.75	3.85	2.25	1.8	1.35
11.....	2.05	1.85	2.05	1.8	2.35	2.25	3.0	3.65	3.85	2.25	1.75	1.25
12.....	2.1	1.75	2.1	1.8	2.35	2.35	2.95	3.55	3.75	2.2	1.65	1.25
13.....	2.15	1.75	2.05	1.85	2.45	2.45	2.95	3.4	3.65	2.2	1.6	1.2
14.....	2.2	1.75	2.0	1.95	2.45	2.95	3.05	3.35	3.45	2.2	1.6	1.2
15.....	2.25	1.85	1.95	2.05	2.45	2.9	3.2	3.3	3.4	2.15	1.6	1.35
16.....	2.15	1.95	1.9	2.15	2.55	2.95	3.05	3.25	3.25	2.05	1.45	1.35
17.....	2.15	2.05	1.8	2.3	2.45	2.95	3.05	3.4	3.25	2.1	1.5	1.35
18.....	2.15	2.1	1.8	2.35	2.35	2.9	3.15	3.3	3.1	2.05	1.5	1.4
19.....	2.25	2.15	1.85	2.45	2.35	2.8	3.15	3.25	3.2	2.0	1.6	1.35
20.....	2.15	2.15	1.9	2.35	2.3	2.95	3.05	3.35	3.1	2.1	1.55	1.3
21.....	2.1	2.05	1.9	2.55	2.25	3.05	3.05	3.35	3.05	2.1	1.45	1.35
22.....	2.1	2.05	1.85	3.1	2.25	3.15	3.05	3.4	2.95	2.0	1.4	1.4
23.....	2.15	2.1	1.85	3.5	2.35	3.05	3.15	3.45	2.95	2.05	1.4	1.5
24.....	2.2	2.1	1.95	3.3	2.4	2.95	3.15	3.5	2.9	2.05	1.3	1.55
25.....	2.15	2.05	1.95	3.1	2.45	3.05	3.0	3.45	2.8	2.0	1.3	1.6
26.....	2.1	2.05	1.95	3.05	2.4	3.15	3.0	3.35	2.7	2.0	1.3	1.55
27.....	2.05	2.05	1.95	3.05	2.4	3.5	3.1	3.55	2.65	1.9	1.2	1.6
28.....	2.15	2.1	2.0	2.9	2.4	3.7	3.15	3.65	2.7	1.9	1.25	1.65
29.....	2.25	2.1	2.1	2.85	-----	3.65	3.2	3.75	2.65	1.85	1.2	1.55
30.....	2.35	2.05	2.05	2.8	-----	3.4	3.15	3.95	2.65	1.9	1.25	1.65
31.....	2.35	-----	2.1	2.75	-----	3.3	-----	4.15	-----	1.9	1.1	-----
1909-10.												
1.....	1.7	1.85	2.85	2.05	1.45	1.8	3.45	3.4	2.7	-----	-----	-----
2.....	1.7	1.85	2.85	2.0	1.45	2.4	3.6	3.4	2.65	-----	-----	-----
3.....	1.85	1.9	2.65	1.2	1.55	3.9	3.7	3.5	2.6	-----	-----	-----
4.....	1.85	2.0	2.6	1.3	1.55	3.8	3.7	3.5	5.55	-----	-----	-----
5.....	1.9	2.18	2.6	1.3	1.55	3.8	3.6	3.45	2.55	-----	-----	-----
6.....	1.8	2.18	2.3	1.3	1.55	3.9	3.7	3.4	2.4	-----	-----	-----
7.....	1.75	2.25	2.45	1.35	1.55	3.8	3.8	3.4	2.4	-----	-----	-----
8.....	1.75	2.25	2.5	1.4	1.45	3.7	3.8	3.35	2.3	-----	-----	-----
9.....	1.75	2.3	2.3	1.35	1.45	3.5	3.75	3.35	2.2	-----	-----	-----
10.....	1.75	2.35	2.25	1.4	1.5	2.55	3.75	3.3	2.2	-----	-----	-----
11.....	1.8	2.45	2.2	1.4	1.5	2.7	3.85	3.3	2.15	-----	-----	-----
12.....	1.9	2.45	2.15	1.4	1.5	2.8	3.9	3.25	2.1	-----	-----	-----
13.....	1.85	2.5	2.15	1.4	1.5	3.35	4.4	3.2	2.1	-----	-----	-----
14.....	1.75	2.5	2.15	1.4	1.5	3.95	4.35	3.25	2.0	-----	-----	-----
15.....	1.85	2.6	2.2	1.4	1.5	4.05	4.5	3.1	2.0	-----	-----	-----
16.....	1.85	2.6	2.15	1.4	1.45	4.2	4.6	3.0	1.9	-----	-----	1.3
17.....	1.85	2.65	2.0	1.5	1.5	4.55	4.6	3.0	1.9	-----	-----	1.3
18.....	1.85	2.75	2.0	1.55	1.5	5.2	4.7	2.9	1.85	-----	-----	1.3
19.....	1.85	2.78	2.05	1.55	1.5	4.95	4.4	2.9	1.85	-----	-----	1.4
20.....	1.95	2.85	1.95	1.5	1.45	6.65	4.15	2.85	1.8	-----	-----	1.4
21.....	2.05	2.9	1.95	1.5	1.5	6.0	3.9	2.85	1.75	-----	-----	1.4
22.....	2.05	2.95	1.9	1.5	1.5	5.45	4.05	2.8	1.75	-----	-----	1.5
23.....	2.1	3.2	1.85	1.45	1.55	5.15	4.05	2.8	1.7	-----	-----	1.5
24.....	2.05	3.15	1.8	1.45	1.55	4.65	3.95	2.7	1.65	-----	-----	1.4
25.....	2.1	3.25	1.75	1.55	1.6	4.2	3.9	2.7	1.65	-----	-----	1.3
26.....	2.1	3.1	1.7	1.55	1.65	4.1	4.2	2.8	1.6	-----	-----	1.3
27.....	2.05	3.15	1.7	1.55	1.65	4.0	4.05	2.9	1.6	-----	-----	1.3
28.....	2.05	3.15	1.7	1.55	1.75	3.9	3.9	2.9	1.55	-----	-----	1.35
29.....	2.05	3.05	1.8	1.55	-----	3.8	3.85	2.8	1.35	-----	-----	1.4
30.....	2.1	3.05	1.8	1.45	-----	3.55	3.8	2.8	1.3	-----	-----	1.45
31.....	2.12	-----	1.7	1.45	-----	3.45	-----	2.7	-----	-----	-----	-----

NOTE.—The stage of the river fluctuates somewhat during the day on account of placer mining upstream; during the spring, when the snow is melting, there is a persistent diurnal fluctuation. Ice present during January, February, November, and December, 1905; Jan. 1 to Feb. 24, 1906; Nov. 19, 1906, to Feb. 10, 1907; Jan. 5-11 and Dec. 13-19, 1908; Jan. 1-16, 1909, and Dec. 10, 1909, to Mar. 1, 1910. Winter gage heights evidently read to water surface until about 1903, and to bottom of ice, or a little above the bottom, thereafter. Gage heights after Jan. 1, 1910, refer to datum 0.56 foot above that used previously.

Daily discharge, in second-feet, of Powder River at Salisbury, Oreg., for 1904-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904.												
1.					60	111	196	622	622	150	43	34
2.					66	102	209	656	571	150	38	26
3.					65	120	252	622	605	140	38	26
4.					66	60	333	673	588	120	38	22
5.					62	69	283	656	571	140	34	22
6.					66	111	588	622	639	111	30	19
7.					69	267	588	605	639	130	34	19
8.					60	209	741	622	554	130	34	19
9.					75	150	912	588	588	140	34	16
10.					89	172	946	622	503	111	30	16
11.					83	161	1,200	656	452	102	26	16
12.					99	140	1,460	656	384	94	30	13
13.					116	130	1,300	673	401	86	30	16
14.					94	537	1,590	639	401	86	26	13
15.					111	172	1,520	639	418	79	26	13
16.					161	140	1,270	673	452	72	22	7
17.					144	165	1,100	690	435	66	13	7
18.					161	140	1,050	707	401	72	13	5
19.					150	102	1,080	622	401	60	7	3
20.					184	184	1,220	622	350	54	9	2
21.					196	130	946	707	299	60	9	13
22.					299	120	571	861	267	54	9	11
23.					196	267	753	946	223	48	34	16
24.					252	130	656	656	223	54	26	22
25.					209	111	588	890	184	48	30	22
26.					201	102	662	656	172	48	34	30
27.					223	72	707	622	172	54	34	26
28.					150	86	844	639	140	43	38	22
29.					150	161	997	639	120	43	38	22
30.					150	775	639	639	150	48	38	19
31.					150			639		43	48	
1904-5.												
1.	11	34				102	130	252	316	66	26	5
2.	9	34				86	130	267	283	79	22	5
3.	11	34				102	150	267	283	66	16	4
4.	13	30				161	172	223	283	54	13	7
5.	13	34				150	150	196	283	43	11	4
6.	11	30				172	150	172	237	34	11	3.5
7.	13	30				172	196	223	209	19	11	3.5
8.	9	26				150	252	223	223	16	13	4
9.	11	22				150	252	196	223	9	9	4
10.	16	22				172	223	172	196	19	13	4
11.	34	26				161	196	172	184	34	13	3.5
12.	43	26				237	209	172	172	22	13	3.5
13.	38	22				252	172	172	161	26	11	3.5
14.	34	22				223	172	161	172	26	13	3.5
15.	34	22				283	196	150	172	26	13	3.5
16.	34	26				283	172	172	150	26	11	3.5
17.	34	22				283	196	223	130	22	13	4
18.	43	22				252	172	252	130	26	9	3.5
19.	54	26				223	196	223	111	13	9	3.5
20.	48	26				196	184	223	130	13	7	4
21.	43	26				196	184	223	111	19	5	4
22.	48	30				196	184	223	86	19	5	9
23.	34	30				184	184	184	94	26	4	7
24.	34	30				196	209	196	94	22	5	5
25.	34	34				172	223	172	94	13	7	5
26.	34	34				150	267	172	86	16	5	9
27.	38	30				140	283	184	79	16	4	5
28.	38	30				140	283	196	79	13	5	9
29.	30	30				130	252	161	86	13	5	9
30.	34	30				130	283	196	66	16	5	19
31.	34					94		252		26	4	

Daily discharge, in second-feet, of Powder River at Salisbury, Oreg., for 1904-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	19			15	13	34	486	520	252	94	22	11
2.	19			15	13	34	537	486	223	79	26	9
3.	13			13	15	34	316	520	237	86	13	9
4.	26			13	15	34	350	554	267	66	13	9
5.	19			13	15	34	571	520	299	60	11	9
6.	19			13	17	34	792	384	299	54	16	7
7.	22			13	17	34	810	486	267	54	13	9
8.	26			13	17	38	639	486	267	54	16	9
9.	22			15	19	38	554	486	237	48	13	11
10.	26			15	19	43	503	418	267	43	11	7
11.	26			15	19	34	537	367	252	43	13	11
12.	26			15	19	30	452	367	283	43	13	13
13.	26			15	19	30	435	350	267	48	9	9
14.	13			13	21	38	486	316	252	43	7	11
15.	22			13	21	43	520	252	223	48	9	9
16.	19			13	23	43	554	267	252	43	7	9
17.	22			11	25	38	486	196	252	38	5	9
18.	19			11	25	43	520	172	223	30	5	9
19.	19			15	25	54	452	172	223	30	5	9
20.	19			17	27	66	486	196	172	26	9	9
21.	30			17	30	60	486	196	196	30	11	7
22.	30			17	30	66	707	196	184	26	9	9
23.	26			15	30	66	656	196	172	30	13	9
24.	26			15	27	94	622	172	150	26	13	9
25.	22			15	43	161	554	172	184	22	9	7
26.	26			15	38	196	503	196	196	26	9	9
27.	22			15	30	299	333	184	172	26	7	9
28.	30			17	34	299	316	223	150	26	11	11
29.	30			17		333	283	196	130	22	9	11
30.	26			15		537	452	196	102	16	9	7
31.	26			15		656		223		16	9	
1906-7.												
1.	11	19	32	30	42	187	264	535	516	166	54	19
2.	9	22	25	27	45	176	236	497	459	146	48	16
3.	7	30	25	25	45	187	291	478	422	146	43	14
4.	9	34	30	23	40	166	291	422	386	155	38	14
5.	11	43	30	27	94	137	264	440	336	155	38	11
6.	9	43	30	27	128	176	305	459	320	166	34	11
7.	11	38	32	25	104	176	440	459	264	128	30	19
8.	11	48	32	25	76	176	618	497	187	128	34	19
9.	7	43	30	27	76	198	554	535	166	128	34	19
10.	9	38	30	27	76	198	596	575	210	110	34	22
11.	9	43	34	27	71	187	660	497	277	94	30	22
12.	9	54	30	23	84	166	790	459	352	110	26	14
13.	11	54	30	23	84	187	878	516	250	128	26	14
14.	9	43	34	25	166	166	878	554	166	110	22	16
15.	9	34	32	25	166	187	834	660	166	102	30	14
16.	13	26	40	25	187	187	746	618	166	86	26	16
17.	13	26	40	25	187	176	618	660	146	94	26	14
18.	11	26	40	30	210	305	535	768	128	110	22	16
19.	7	9	30	30	277	497	459	746	110	94	19	16
20.	11	15	23	27	352	535	440	704	102	79	19	16
21.	11	17	25	25	320	478	459	596	137	79	19	14
22.	11	21	30	23	291	386	497	459	146	66	16	14
23.	11	23	30	27	320	369	535	386	166	72	19	16
24.	16	27	32	27	336	305	575	369	146	66	19	14
25.	19	23	37	23	478	320	516	459	146	66	19	11
26.	19	23	40	30	422	291	478	478	146	54	19	11
27.	19	23	40	34	291	264	422	497	146	48	16	16
28.	16	21	34	34	210	187	386	535	146	43	14	16
29.	16	23	30	37		176	422	516	137	38	11	11
30.	13	27	30	40		176	497	497	152	38	14	16
31.	13		27	42		210		535		34	14	

Daily discharge, in second-feet, of Powder River at Salisbury, Oreg., for 1904-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	16	19	43	30	42	81	198	518	220	134	36	0.4
2.....	14	19	43	30	42	89	209	482	232	114	42	.8
3.....	22	22	43	30	53	89	232	465	244	114	36	.6
4.....	26	22	38	30	53	89	244	448	310	97	32	.6
5.....	26	16	34	32	59	73	269	415	256	97	27	.4
6.....	22	16	30	32	53	66	269	415	220	114	36	.6
7.....	19	14	34	32	53	81	282	482	220	114	32	.6
8.....	19	14	34	32	59	89	310	518	220	124	27	.6
9.....	19	14	43	36	42	73	355	296	220	134	20	.8
10.....	19	14	43	32	42	81	370	220	220	154	14	.6
11.....	16	19	43	32	47	97	385	220	269	154	12	.4
12.....	16	19	54	36	47	89	415	209	244	176	10	.1
13.....	14	19	54	36	53	105	430	220	269	176	8.4	.4
14.....	14	26	43	32	53	114	482	220	296	154	6.7	1.2
15.....	11	26	43	32	59	232	518	198	282	134	5.5	2.1
16.....	14	26	38	42	59	570	552	198	244	114	3.4	2.1
17.....	16	26	34	42	66	415	482	198	244	114	3.4	2.6
18.....	14	26	38	47	66	400	400	220	282	97	3.4	5.5
19.....	14	26	28	53	66	370	448	244	269	81	3.4	17
20.....	14	34	38	53	73	370	482	220	244	66	2.1	17
21.....	16	34	34	53	73	370	588	220	256	66	2.1	17
22.....	19	34	30	42	73	325	552	209	269	66	2.1	14
23.....	19	34	30	42	73	296	518	198	282	66	1.6	12
24.....	22	26	30	42	81	310	482	198	256	81	1.2	10
25.....	19	26	30	47	89	256	415	220	244	81	.8	10
26.....	22	26	30	53	89	220	385	220	232	66	.8	8.4
27.....	22	30	30	53	81	209	415	198	220	59	.6	8.4
28.....	22	38	30	53	81	187	430	198	209	47	.4	8.4
29.....	19	38	30	53	66	187	482	176	209	42	.4	8.4
30.....	22	43	30	53	.....	154	518	187	176	36	.2	8.4
31.....	22	.....	30	36	.....	165	.....	220	.....	27	.1	.....
1908-9.												
1.....	20	59	32	22	97	72	175	210	590	65	23	0.1
2.....	14	53	36	25	97	58	286	210	630	52	23	.5
3.....	14	53	27	22	72	58	247	247	590	58	20	1.0
4.....	20	53	36	18	58	72	210	286	514	58	20	.8
5.....	27	66	42	16	58	72	260	315	542	65	13	.5
6.....	27	66	42	16	46	58	234	300	590	58	13	.8
7.....	20	59	36	10	46	58	210	361	542	65	10	.8
8.....	20	42	36	10	41	72	186	315	542	58	16	.8
9.....	14	27	42	10	41	58	175	346	496	46	16	.8
10.....	20	20	36	8	52	46	175	377	410	46	10	.8
11.....	32	17	32	8	58	46	175	346	410	46	8.2	.4
12.....	36	12	36	8	58	58	164	315	377	41	5.0	.4
13.....	42	12	32	10	72	72	164	273	346	41	3.7	.2
14.....	47	12	27	16	72	164	186	260	286	41	3.7	.2
15.....	53	17	24	22	72	154	222	247	273	36	3.7	.8
16.....	42	24	20	29	88	164	186	234	234	27	1.5	.8
17.....	42	32	14	52	72	164	186	273	234	31	2.0	.8
18.....	42	36	14	58	58	154	210	247	198	27	2.0	1.0
19.....	53	42	17	72	58	134	210	234	222	23	3.7	.8
20.....	42	42	20	58	52	164	186	260	198	31	2.8	.5
21.....	36	32	20	88	46	186	186	260	186	31	1.5	.8
22.....	36	32	17	198	46	210	186	273	164	23	1.0	1.0
23.....	42	36	17	300	58	186	210	286	164	27	1.0	2.0
24.....	47	36	24	247	65	164	210	300	154	27	.5	2.8
25.....	42	32	24	198	72	186	175	286	134	23	.5	3.7
26.....	36	32	24	186	65	210	175	260	115	23	.5	2.8
27.....	32	32	24	186	65	300	198	315	106	16	.2	3.7
28.....	42	36	27	154	65	361	210	346	115	16	.4	2.8
29.....	53	36	36	144	.....	346	222	377	106	13	.2	5.0
30.....	66	32	32	134	.....	273	210	443	106	16	.4	5.0
31.....	66	.....	36	124	.....	247	.....	514	.....	16	.0	.....

Daily discharge, in second-feet, of Powder River at Salisbury, Oreg., for 1904-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	6.4	13	144	79	14	45	454	436	214	.....	.....	.....
2.....	6.4	13	144	71	14	143	508	436	201	.....	.....	.....
3.....	13	16	106	4	21	620	544	472	188	.....	.....	.....
4.....	13	31	97	7	21	582	544	472	176	.....	.....	.....
5.....	16	39	97	7	21	582	508	454	176	.....	.....	.....
6.....	13	39	52	7	21	620	544	436	143	.....	.....	.....
7.....	8.2	46	72	9	21	582	582	436	143	.....	.....	.....
8.....	8.2	46	80	11	14	544	582	419	123	.....	.....	.....
9.....	8.2	52	52	9	14	472	563	419	105	.....	.....	.....
10.....	8.2	58	37	11	17	176	563	402	105	.....	.....	.....
11.....	10	72	33	11	17	214	601	402	96	.....	.....	.....
12.....	16	72	29	11	17	242	620	385	87	.....	.....	.....
13.....	13	80	29	11	17	419	810	368	87	.....	.....	.....
14.....	8.2	80	29	11	17	639	791	385	71	.....	.....	.....
15.....	13	97	33	11	17	677	848	336	71	.....	.....	.....
16.....	13	97	29	11	14	734	886	304	57	.....	.....	7
17.....	13	106	18	17	17	867	886	304	57	.....	.....	7
18.....	13	124	18	21	17	1,110	924	272	51	.....	.....	7
19.....	13	130	22	21	17	1,020	810	272	51	.....	.....	11
20.....	20	144	16	17	14	1,660	715	257	45	.....	.....	11
21.....	27	154	16	17	17	1,420	620	257	40	.....	.....	11
22.....	27	164	13	17	17	1,210	677	242	40	.....	.....	17
23.....	31	222	10	14	21	1,100	677	242	34	.....	.....	17
24.....	27	210	8	14	21	900	639	214	30	.....	.....	11
25.....	31	234	6.6	21	25	734	620	214	30	.....	.....	7
26.....	31	198	5.1	21	30	696	734	242	25	.....	.....	7
27.....	27	210	5.1	21	30	658	677	272	25	.....	.....	7
28.....	27	210	5.1	21	40	620	620	272	21	.....	.....	9
29.....	27	186	8	21	.....	582	601	242	9	.....	.....	11
30.....	31	186	8	14	.....	490	582	242	7	.....	.....	14
31.....	33	.....	5.1	14	.....	454	.....	214	.....	.....	.....	.....

NOTE.—Daily discharge determined as follows:

1904 to 1906. From rating curve fairly well defined below 800 second-feet, except for ice period, Jan. 1 to

Feb. 24, 1906, and Nov. 19, 1906, to Feb. 12, 1907, for which curves were poorly defined.

1907. From fairly well defined curves.

1908. From poorly defined rating curve; estimated because of ice, Dec. 22, 1907, to Jan. 4, 1908.

1909. From fairly well defined curve. Discharge for Jan. 1-16 and Dec. 10-31 obtained by open-channel curve reduced 20 per cent to counteract effect of ice.

1910. From fairly well defined curve between 6 and 800 second-feet.

Winter estimates of uncertain value, and for 1909 and 1910 they may be too small as observer was reading gage height to bottom of ice.

Monthly discharge of Powder River at Salisbury, Oreg., for 1904-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
January.....			a 22	1,350	D.
February.....	299	60	133	7,650	C.
March.....	537	60	154	9,470	C.
April.....	1,590	196	843	50,200	C.
May.....	946	588	663	40,800	B.
June.....	639	120	393	23,700	B.
July.....	150	43	85	5,230	B.
August.....	48	7	28.8	1,770	B.
September.....	34	2	17.2	1,020	C.
The period.....				141,000	
1904-5.					
October.....	54	9	29.5	1,810	B.
November.....	34	22	28	1,670	C.
December.....			a 19	1,170	D.
January.....			a 19	1,170	D.
February.....			a 34	1,890	D.
March.....	283	86	179	11,000	C.
April.....	283	130	201	12,000	C.
May.....	267	150	202	12,400	B.
June.....	316	66	164	9,760	B.
July.....	79	9	27	1,660	B.
August.....	26	4	10	615	B.
September.....	19	3.5	5.4	321	B.
The year.....	283		76.5	55,500	
1905-6.					
October.....	30	13	23.1	1,420	B.
November.....			a 10.0	595	D.
December.....			a 8.0	492	D.
January.....	17	11	14.5	892	D.
February.....	43	13	23.1	1,280	C.
March.....	666	30	114	7,010	C.
April.....	810	283	513	30,500	B.
May.....	554	172	312	19,200	B.
June.....	299	102	222	13,200	B.
July.....	94	16	41.8	2,570	B.
August.....	26	5	11.1	682	B.
September.....	13	7	9.2	547	B.
The year.....	810		108	78,400	
1906-7.					
October.....	19	7	11.6	713	B.
November.....	54	9	30.5	1,810	C.
December.....	40	23	31.7	1,950	C.
January.....	42	23	27.9	1,720	C.
February.....	478	40	185	10,300	C.
March.....	535	137	243	14,900	B.
April.....	878	236	516	30,700	B.
May.....	768	369	529	32,500	B.
June.....	516	102	220	13,100	B.
July.....	166	34	98	6,030	B.
August.....	54	11	26.2	1,610	B.
September.....	22	11	15.4	916	B.
The year.....	878	7	161	116,000	
1907-8.					
October.....	26	11	18.4	1,130	B.
November.....	43	14	24.9	1,480	B.
December.....	54	30	36.8	2,260	C.
January.....	53	30	40.3	2,480	C.
February.....	89	42	61.8	3,550	C.
March.....	570	66	202	12,400	B.
April.....	588	198	404	24,000	B.
May.....	518	176	279	17,200	B.
June.....	310	176	245	14,600	B.
July.....	176	27	100	6,150	C.
August.....	42	.1	12.0	738	D.
September.....	17	.1	5.31	316	D.
The year.....	588	.1	119	86,300	

a Estimated, on account of ice.

Monthly discharge of Powder River at Salisbury, Oreg., for 1904-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	66	14	36.3	2,230	C.
November.....	66	12	36.0	2,140	C.
December.....	42	14	28.5	1,750	C.
January.....	300	8	79.0	4,800	C.
February.....	97	41	62.5	3,470	B.
March.....	361	46	147	9,040	A.
April.....	286	164	201	12,000	A.
May.....	514	210	301	18,500	A.
June.....	630	106	319	19,000	A.
July.....	65	13	37.0	2,280	A.
August.....	23	.0	6.66	410	C.
September.....	5	.1	1.41	84	D.
The year.....	630	.0	105	75,800	
1909-10.					
October.....	33	6.4	17.8	1,090	B.
November.....	234	13	111	6,600	B.
December.....	144	5.1	39.6	2,430	D.
January.....	79	4	17.8	1,090	D.
February.....	40	14	19.4	1,080	D.
March.....	1,660	45	671	41,300	C.
April.....	924	454	658	39,200	C.
May.....	472	214	333	20,500	B.
June.....	214	7	83.6	4,970	B.
July.....			a 7.0	430	D.
August.....			a 5.0	307	D.
September.....			a 8.6	512	D.
The year.....	1,660		164	120,000	

a Estimated.

POWDER RIVER NEAR NORTH POWDER, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 26, T. 6 S., R. 40 E., at proposed dam site for Thief Valley reservoir, 7 miles east of North Powder and about 8 miles southeast of Telocaset.

Records presented.—March 9, 1909, to September 30, 1910

Drainage area.—826 square miles.

Gage.—Inclined and vertical staff.

Channel.—Bowlders and gravel; probably permanent.

Discharge measurements.—Made from cable at gage section.

Winter flow.—River freezes; discharge relation may be affected by ice two or three months.

Artificial control.—A temporary dam, constructed each year about 1 mile above the station to subirrigate adjoining lands, may cause fluctuation in stage during low-water period.

Diversions.—Most of low-water flow of Powder River and tributaries diverted above station for irrigation.

Accuracy.—Results good. As a rule estimates of winter flow can not be made.

Cooperation.—Gage readings furnished in part by Powder Land & Irrigation Co.

Discharge measurements of Powder River near North Powder, Oreg., in 1909-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 9	H. D. McGlashan.....	2.35	201	Mar. 14	L. R. Allen.....	4.99	999
July 17	R. B. Post.....	1.48	36	Sept. 19	F. C. Ebert.....	1.10	15
Sept. 29	O. C. Finkelnburg.....	1.25	20.9				
Oct. 10	F. F. Henshaw.....	1.22	18.6				

Daily gage height, in feet, of Powder River near North Powder, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.							2.90	1.90	3.80	2.00	1.35	1.05
2.							2.90	1.80	4.60	1.92	1.32	1.05
3.							2.90	1.75	5.30	1.87	1.27	1.10
4.							2.94	1.70	5.15	1.84	1.25	1.20
5.							2.95	1.80	4.83	1.80	1.23	1.28
6.							2.90	1.73	5.20	1.75	1.22	1.35
7.							2.80	1.73	4.80	1.73	1.22	1.33
8.							2.74	1.69	3.80	1.69	1.22	1.32
9.						2.55	2.52	1.70	3.78	1.68	1.22	1.30
10.						2.32	2.54	1.70	3.55	1.68	1.20	1.29
11.						2.20	2.50	1.71	3.25	1.66	1.20	1.30
12.						2.20	2.35	1.70	3.20	1.65	1.20	1.30
13.						2.20	2.30	1.75	3.50	1.65	1.19	1.30
14.						2.20	2.34	1.73	3.60	1.63	1.18	1.29
15.						2.20	2.35	1.65	3.55	1.60	1.18	1.29
16.						2.25	2.40		3.45	1.45	1.15	1.29
17.						2.30	2.42		3.50	1.42	1.14	1.30
18.						2.40	2.40		3.60	1.43	1.13	1.27
19.						2.51	2.35		3.65	1.43	1.12	1.24
20.						2.51	2.38		3.65	1.43	1.10	1.20
21.						2.51	2.35		3.60	1.40	1.10	1.20
22.						2.44	2.34		3.50	1.37	1.10	1.20
23.						2.50	2.30	1.61	3.20	1.35	1.10	1.20
24.						2.51	2.20	1.60	2.90	1.30	1.10	1.20
25.						2.50	2.20	1.57	2.70	1.25	1.10	1.20
26.						2.51	2.18	1.55	2.40	1.30	1.09	1.20
27.						2.52	2.12	1.60	2.40	1.40	1.09	1.30
28.						2.70	2.10	2.85	2.30	1.38	1.08	1.33
29.						2.74	2.09	3.10	2.20	1.37	1.08	1.36
30.						2.75	2.00	3.40	2.15	1.37	1.05	1.38
31.						2.80		3.60		1.37	1.05	
1909-10.												
1.	1.40	1.59		2.5			4.75	5.3	2.55		.7	
2.	1.45	1.60		2.4			4.75	5.15	2.55		.7	
3.	1.46	1.65		2.5				4.2	2.3		.6	
4.	1.48	1.70		2.5			4.7	4.6	2.15		.65	
5.	1.49	1.73		2.6			4.65	4.45	2.0		.5	
6.	1.49	1.60		2.5			4.65	4.2	1.9		.5	
7.	1.50	1.64		2.4			4.55	4.0	1.8		.5	
8.	1.50	1.68		2.5		4.3	4.5	4.95	1.7		.5	
9.	1.50	1.68		2.5		4.75	4.4	5.0	1.6	.9		
10.	1.50	1.64		2.5		4.55	4.65	5.1	1.5	.9		
11.	1.50	1.60		2.6		4.25	5.1	4.9	1.45	.9		.75
12.	1.50	1.60		2.5		4.8	5.35	4.7	1.35	.9		.8
13.	1.50	1.60		2.6		5.2	5.5	4.5	1.3	.9		.95
14.	1.45	1.60		2.65		5.0	5.5	4.4	1.25	.9		.9
15.	1.45	1.62				4.7	5.35	4.1	1.2	.8		.9
16.	1.45	1.58				5.3	5.2	3.8	1.2	.8		1.0
17.	1.40	1.55				5.45	5.2	3.5	1.2	.8		1.15
18.	1.22	1.53				5.65	5.1	3.2	1.2	.8		1.15
19.	1.45	1.60				6.1	5.2	3.0	1.15	.8		1.15
20.	1.48	1.65				6.75	5.35	2.9	1.1	.8		1.1
21.	1.50	1.80				9.85	5.45	2.95	1.05	.8		1.1
22.	1.51	1.90				9.15	5.4	2.65	1.0	.8		1.1
23.	1.50	1.95				8.6	5.4	2.6	1.0	.8		1.1
24.	1.48	2.30				7.6	5.4	2.55	1.0	.8		1.1
25.	1.50	3.10				7.0	5.8	2.6	1.0	.8		1.1
26.	1.48	2.80	2.50			6.45	5.9	2.7		.8		1.05
27.	1.48	2.50	2.40			6.0	6.0	2.7		.8		1.1
28.	1.52	2.30	2.50			5.45	5.45	2.65		.8		1.1
29.	1.52	2.40	2.60			5.2	5.4	2.65		.8		1.1
30.	1.55	2.50	2.40			4.7	5.5	2.6		.8		1.1
31.	1.57		2.50			4.55		2.5		.8		

NOTE.—River frozen from about Nov. 8, 1909, to about Mar. 5, 1910, when the water began running over the ice, which gradually broke away. Channel clear of ice and the first open-water gage reading obtained Mar. 8. Channel dry from Aug. 8 to Sept. 6, 1910, when the water began to run, but did not reach the gage.

Daily discharge, in second-feet, of Powder River near North Powder, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1							343	94	606	115	27	12
2							343	76	864	98	25	12
3							343	68	1,100	89	22	13
4							354	61	1,050	83	21	18
5							356	76	942	76	20	23
6							343	66	1,070	68	19	27
7							317	66	932	66	19	26
8							301	60	606	60	19	25
9						200	244	61	600	58	19	24
10						192	249	61	529	58	18	23
11						163	239	62	440	56	18	24
12						163	200	61	426	54	18	24
13						163	187	68	514	54	18	24
14						163	197	63	544	52	17	23
15						163	200	54	529	48	17	23
16						175	213	53	499	34	16	23
17						187	218	53	514	32	15	24
18						213	213	52	544	32	14	22
19						242	200	52	559	32	14	20
20						242	208	51	559	32	13	18
21						242	200	50	544	30	13	18
22						223	197	50	514	28	13	18
23						239	187	49	426	27	13	18
24						242	163	48	343	24	13	18
25						239	163	45	291	21	13	18
26						242	158	43	213	24	13	18
27						244	144	48	213	30	13	24
28						291	139	330	187	29	12	26
29						301	137	398	163	28	12	28
30						304	115	484	151	28	12	29
31						317		544		28	12	
1909-10.												
1	30	47					915	1,100	252	9	3.3	0.0
2	34	48					915	1,050	252	9	3.3	.0
3	35	54					906	734	187	9	1.6	.0
4	36	61					898	864	151	9	2.4	.0
5	37	66					881	814	115	9	.7	.0
6	37	48					881	734	94	9	.7	.0
7	38	53					847	670	76	8	.7	.0
8	38	44				766	830	983	61	8	.7	.0
9	38	44				915	798	1,000	48	8	.0	.0
10	38	40				847	881	1,030	38	8	.0	.0
11	38	36				750	1,030	966	34	8	.0	4.4
12	38	36				932	1,120	898	27	8	.0	5.4
13	38	36				1,070	1,170	830	24	8	.0	9.5
14	34	36				1,000	1,170	798	22	8	.0	8
15	34	38				898	1,120	702	19	5.4	.0	8
16	34	34				1,100	1,070	606	19	5.4	.0	11
17	30	32				1,150	1,070	514	19	5.4	.0	17
18	19	31				1,220	1,030	426	19	5.4	.0	17
19	34	36				1,380	1,070	370	17	5.4	.0	17
20	36	41				1,620	1,120	343	15	5.4	.0	15
21	38	57				2,860	1,150	356	13	5.4	.0	15
22	39	70				2,580	1,140	278	11	5.4	.0	15
23	38	104				2,360	1,140	265	11	5.4	.0	15
24	36	187				1,960	1,140	252	11	5.4	.0	15
25	38	398				1,720	1,280	265	11	5.4	.0	15
26	36	317				1,500	1,310	291	11	5.4	.0	13
27	36	239				1,340	1,340	291	10	5.4	.0	15
28	40	187				1,150	1,150	278	10	5.4	.0	15
29	40	213				1,070	1,140	278	10	5.4	.0	15
30	43	239				898	1,170	265	10	5.4	.0	15
31	45					847		239		5.4	.0	

NOTE.—Daily discharge determined as follows:

1909. From well-defined rating curve; May 6-22, interpolated; Nov. 8-22, discharge obtained by open-channel curve reduced 20 per cent on account of ice.

1910. From curve well defined between 15 and 1,000 second-feet.

Discharge for December, 1909, and January and February, 1910, can be estimated approximately by taking twice the discharge at Salisbury and interpolating for the period Mar. 1-7.

Monthly discharge of Powder River near North Powder, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
March 9-31.....	317	163	224	10,200	A.
April.....	356	115	229	13,600	A.
May.....	544	43	108	6,640	A.
June.....	1,100	151	549	32,700	A.
July.....	115	21	48.2	2,960	A.
August.....	27	12	16.4	1,010	A.
September.....	29	12	21.4	1,270	A.
The period.....				68,400	
1909-10.					
October.....	45	19	36.3	2,230	A.
November.....	398	31	95.7	5,690	C.
March 8-31.....	2,860	750	1,330	63,300	A.
April.....	1,340	798	1,060	63,100	A.
May.....	1,100	239	611	37,600	A.
June.....	252	10	53.2	3,170	B.
July.....	9	5.4	6.77	416	C.
August.....	3.3	.0	.43	27	D.
September.....	17	.0	8.68	516	C.

EAGLE CREEK NEAR BAKER, OREG.

Location.—In sec. 21, T. 6 S., R. 43 E., 700 feet below mouth of West Fork of Eagle Creek, 35 miles northeast of Baker.

Records presented.—May 20, 1909, to September 10, 1910.

Drainage area.—About 33 square miles.

Gage.—Vertical staff.

Channel.—Gravel and cobblestones; very rough; shifts slightly.

Discharge measurements.—Made from footbridge or by wading.

Winter flow.—Not affected by ice at any time during which record was being obtained.

Diversions.—The Sparta ditch—an old hydraulic mining ditch—diverts water from Eagle Creek and West Fork some distance above their confluence and carries it around the west side of the valley to the vicinity of Sparta. On July 14, 1911, this ditch was carrying 14.5 second-feet. It is used 5 or 6 months of warmest weather.

Accuracy.—Results good in 1909 and part of 1910.

Cooperation.—Records furnished by Powder Land & Irrigation Co.

Discharge measurements of Eagle Creek near Baker, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Fct.</i>	<i>Sec.-ft.</i>	1910.		<i>Fct.</i>	<i>Sec.-ft.</i>
May 20	O. C. Finkelnburg.....	2.90	438	Aug. 16	W. W. Atwater.....	^a 1.75	16.9
Aug. 3	.....do.....	2.00	113				
Sept. 27	.....do.....	1.40	32				

^a Discharge relation affected by mud in the channel.

Daily gage height, in feet, of Eagle Creek near Baker, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1909.						1909.					
1.....		3.6	3.15	2.05	1.6	16.....		3.5	2.45	1.7	1.25
2.....		3.88	3.1	2.0	1.6	17.....		3.42	2.4	1.68	1.2
3.....		3.85	3.18	1.98	1.55	18.....		3.45	2.32	1.68	1.2
4.....		3.88	3.08	1.95	1.55	19.....		3.52	2.25	1.68	1.25
5.....		3.7	2.92	1.95	1.55	20.....	3.2	3.42	2.18	1.68	1.25
6.....		3.65	2.8	1.88	1.55	21.....		2.98	3.32	2.18	1.68
7.....		3.55	2.65	1.88	1.55	22.....		2.85	3.15	2.18	1.62
8.....		3.42	2.52	1.85	1.5	23.....		2.78	3.12	2.15	1.6
9.....		3.35	2.55	1.82	1.5	24.....		2.85	3.1	2.12	1.6
10.....		3.35	2.6	1.8	1.45	25.....		3.02	3.12	2.1	1.6
11.....		3.42	2.55	1.8	1.45	26.....		3.1	3.0	2.08	1.62
12.....		3.5	2.52	1.75	1.45	27.....		3.35	3.0	2.28	1.6
13.....		3.52	2.5	1.78	1.4	28.....		3.22	3.08	2.42	1.6
14.....		3.55	2.45	1.72	1.35	29.....		3.1	3.15	2.2	1.6
15.....		3.6	2.42	1.72	1.3	30.....		3.07	3.22	2.12	1.6
						31.....		3.3	2.08	1.6	.....

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							
1.....	1.65	2.3	3.1	3.5	2.3	1.7	1.75
2.....	1.75	2.4	3.0	3.2	2.3	1.7	1.75
3.....	1.75	2.25	3.1	3.1	2.3	1.7	1.75
4.....	1.75	2.25	2.95	3.05	2.25	1.7	1.75
5.....	1.75	2.3	2.9	3.0	2.25	1.7	1.75
6.....	1.75	2.3	3.0	3.0	2.2	1.7	1.75
7.....	1.7	2.35	3.0	2.95	2.2	1.7	1.75
8.....	1.7	2.4	3.1	2.85	2.1	1.7	1.75
9.....	1.65	2.55	3.4	2.9	2.05	1.7	1.75
10.....	1.65	2.7	3.8	3.05	2.0	1.8	1.75
11.....	1.7	3.0	3.5	3.1	2.0	1.8	.....
12.....	1.8	3.1	3.4	2.9	1.95	1.8	.....
13.....	1.8	3.0	3.3	2.85	1.9	1.8	.....
14.....	1.85	2.8	3.2	2.85	1.9	1.8	.....
15.....	1.9	2.75	3.2	2.8	1.9	1.8	.....
16.....	2.0	2.8	.....	2.8	1.9	1.8	.....
17.....	2.05	2.95	.....	2.8	1.9	1.8	.....
18.....	2.3	3.1	.....	2.6	1.9	1.75	.....
19.....	2.5	3.3	.....	2.6	1.85	1.75	.....
20.....	2.8	3.4	.....	2.5	1.85	1.75	.....
21.....	2.7	3.25	.....	2.5	1.85	1.75	.....
22.....	2.6	3.3	.....	2.4	1.8	1.75	.....
23.....	2.6	3.4	.....	2.35	1.8	1.75	.....
24.....	2.5	3.4	.....	3.5	1.8	1.75	.....
25.....	2.4	3.4	.....	3.5	1.75	1.75	.....
26.....	2.3	3.6	3.2	2.45	1.7	1.75	.....
27.....	2.25	3.5	3.2	2.45	1.7	1.75	.....
28.....	2.2	3.4	3.1	2.45	1.7	1.75	.....
29.....	2.15	3.3	3.1	2.4	1.6	1.75	.....
30.....	2.15	3.35	3.2	2.35	1.55	1.75	.....
31.....	2.15	.....	3.6	.....	1.7	1.75	.....

NOTE.—Gage heights after about July 30 are affected by mud which was sluiced into the stream during the construction of a diversion dam above, and do not indicate the discharge.

Daily discharge, in second-feet, of Eagle Creek near Baker, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1909.						1909.					
1.....		795	565	124	51	16.....		740	242	63	20
2.....		949	540	113	51	17.....		700	225	61	17
3.....		932	580	109	46	18.....		715	197	61	17
4.....		949	530	103	46	19.....		751	175	61	20
5.....		850	450	103	46	20.....	590	700	155	61	20
6.....		822	390	90	46	21.....	480	650	155	61	20
7.....		768	322	90	46	22.....	415	565	155	53	24
8.....		700	268	85	41	23.....	381	550	148	51	24
9.....		665	280	80	41	24.....	415	540	140	51	24
10.....		665	300	77	36	25.....	500	550	135	51	28
11.....		700	280	77	36	26.....	540	490	131	53	28
12.....		740	268	70	36	27.....	665	490	184	51	32
13.....		751	260	74	32	28.....	600	530	232	51	36
14.....		768	242	66	28	29.....	540	565	160	51	36
15.....		795	232	66	24	30.....	525	600	140	51	36
						31.....	640	.....	131	51	.....

Day.	Mar.	Apr.	May.	June.	July.	Day.	Mar.	Apr.	May.	June.	July.
1910.						1910.					
1.....	57	190	540	740	190	16.....	113	390	590	390	93
2.....	70	225	490	590	190	17.....	124	465	590	390	93
3.....	70	175	540	540	190	18.....	190	540	590	300	93
4.....	70	175	465	515	175	19.....	260	640	590	300	85
5.....	70	190	440	490	175	20.....	390	690	590	260	85
6.....	70	190	490	490	160	21.....	345	615	590	260	85
7.....	63	208	490	465	160	22.....	300	640	640	225	77
8.....	63	225	540	415	135	23.....	300	690	700	208	77
9.....	57	280	690	440	124	24.....	260	690	740	208	77
10.....	57	345	905	515	113	25.....	225	690	740	225	70
11.....	63	490	740	540	113	26.....	190	795	590	242	63
12.....	77	540	690	440	103	27.....	175	740	590	242	63
13.....	77	490	640	415	93	28.....	160	690	540	242	63
14.....	85	390	590	415	93	29.....	148	640	540	225	51
15.....	93	368	590	390	93	30.....	148	665	590	208	40
						31.....	148	.....	795	.....	40

NOTE.—Daily discharge determined from fairly well defined rating curve. Discharge July 30 and 31, 1910, estimated.

Monthly discharge of Eagle Creek near Baker, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
May 20-31.....	665	381	524	12,500	A.
June.....	949	490	700	41,700	B.
July.....	580	131	265	16,300	A.
August.....	124	51	71.3	4,380	A.
September.....	51	17	32.9	1,960	B.
The period.....				76,800	
1910.					
March.....	390	57	146	8,980	B.
April.....	795	175	469	27,900	B.
May.....	905	440	608	37,400	B.
June.....	740	208	378	22,500	B.
July.....	190	^a 40	105	6,460	B.
The period.....				103,000	

^a Estimated.

GRANDE RONDE RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Grande Ronde River, which drains the eastern slope of the Blue Mountains in Oregon and the northern slopes of the Wallowa Mountains (a comparatively high range that runs at right angles to the Blue Mountain Range), rises on the divide in the extreme southern part of Union County, flows in a generally northeasterly direction and unites with Snake River at Zindel, Wash., about 12 miles from the point at which the Snake crosses the Oregon-Washington line.

The principal tributaries of the Grande Ronde are Joseph Creek, which drains the northern part of the Wallowa National Forest, the Wallowa, which rises in the southern slopes of the Wallowa Mountains, and Catherine Creek, which drains the western portion of the Wallowa Mountains. The drainage area of Grande Ronde River at its mouth is 3,950 square miles. Above the mouth of the Wallowa the drainage area is 1,590 square miles.

The topography of this basin is in general rough, the area being almost entirely surrounded by mountain ranges which slope gradually to Grande Ronde Valley, a large area of agricultural land approximately 2,700 feet above the sea level. The general elevation of the Wallowa and Blue mountains, from which the river receives its water supply, is 8,000 feet.

The area drained by this river, except in the agricultural valleys, is almost entirely forested, a large part being included in the national forest reserves. The mean annual rainfall at La Grande is 19 inches, but on the headwaters of the stream it is probably 35 inches. The greater part of this precipitation occurs during the winter months as snow. The river is subject to an annual spring rise which is due to the melting of snow in the mountains, and damaging floods are frequently caused by the sudden melting of snows by chinooks.

The agricultural activities have been confined largely to the production of wheat, and irrigation has not been practiced to an elaborate extent, although exceptionally good possibilities are afforded. Only the lower valley lands immediately contiguous to the streams have been irrigated, but there are at present under consideration a number of larger projects that involve the construction of reservoirs and the irrigation of large areas by means of long canals. Records of the flow of some of the streams in this basin have been kept since 1904. The year 1905 was a "dry year" and all streams in the basin carried less water than during other years covered by the records. The year 1907 was a "wet year."

GRANDE RONDE RIVER AT HILGARD, OREG.

Location.—In sec. 32, T. 2 S., R. 37 E., about half a mile east of Hilgard, at the county highway bridge just below Five Points Creek, about 8 miles above head of Grande Ronde Valley.

Records presented.—November 6, 1903, to March 3, 1910.

Drainage area.—660 square miles.

Gage.—Vertical staff nailed to bridge abutment.

Channel.—Sand and gravel; fairly permanent. The use of the stream for log driving formerly affected the discharge relation, especially for about two months in the summer.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Severely affected by ice one to two months.

Artificial control.—Practically no diversions above station; some storage developed for flooding logs.

Accuracy.—Results poor on account of logs and unfavorable conditions.

Discharge measurements of Grande Ronde River at Hilgard, Oreg., in 1903–1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 5	J. H. Lewis.....	2.07	44	Mar. 10	R. S. Hall.....	5.18	745
6	.....do.....	2.00	46	Apr. 3	.....do.....	4.88	1,140
23	.....do.....	3.02	406	May 16	.....do.....	^a 6.74	657
1904.				June 22	.....do.....	3.74	238
May 6	W. C. Sawyer.....	5.60	2,220	Dec. 4 ^b	Stevens and McGlashan	3.02	66
July 15	.....do.....	2.92	72	1907.			
15	.....do.....	3.25	179	May 1	I. E. Oakes.....	4.37	721
23	.....do.....	3.00	79	Sept. 13	E. F. Kriegsman.....	2.73	33
Nov. 5	.....do.....	2.72	31	1908.			
1905.				May 31	H. D. McGlashan.....	3.85	362
Mar. 4	W. C. Sawyer.....	3.95	498	Oct. 21 ^c	L. R. Allen.....	3.00	50
May 16	.....do.....	4.10	636	1909.			
Aug. 2	.....do.....	2.86	44.1	Oct. 14	F. F. Henshaw.....	2.83	32.3
Nov. 14	R. S. Hall.....	2.86	48.9	1910.			
				Aug. 30	R. W. Davenport.....	1.48	14.2

^a Backwater from log jam.

^b Ice measurement.

^c Measurement very uncertain; it was made with a meter in poor condition. There were water-soaked logs in measuring section, which had been in all the season.

Daily gage height, in feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1			3.10	2.50	2.70	3.00	4.50	5.60	4.20	3.30		
2			3.10	2.50	2.70	2.70	4.80	5.40	4.30	3.30		
3			2.90	2.50	2.90	2.90	5.30	5.30	4.20	3.30		
4			2.70	2.50	2.80	2.90	5.30	5.20	4.20	3.30		
5			2.60	2.50	2.80	3.60	5.20	4.90	4.20	3.30		
6		2.00	2.60	2.50	2.80	3.20	5.30	5.00	4.20	3.30		
7		2.10	2.60	2.50	2.70	3.90	5.40	4.80	4.20	3.30		
8		2.00	2.60	2.50	2.70	5.30	5.40	5.60	4.20	3.30		
9		2.10	2.50	2.50	2.80	4.60	6.60	4.90	4.10	3.30		
10			2.50	2.50	2.80	4.20	6.50	4.80	4.10	3.30		
11		2.10	2.50	2.60	2.80	3.90	6.80	4.90	4.00	3.30		
12		2.10	2.50	2.50	2.80	3.80	7.20	4.60	3.90	3.30		
13		2.00	2.50	2.50	2.70	3.70	7.40	4.50	3.90	3.30		
14			2.50	2.50	2.80	3.60	7.50	4.60	3.80	3.30		
15			2.50	2.50	2.90	3.90	7.40	4.80	3.70	3.20		
16			2.50	2.50	2.90	3.80	7.00	4.80	3.70	3.20		
17			2.50	2.40	2.90	4.00	6.80	4.70	3.60			
18			2.50	2.40	2.90	4.20	6.70	4.80	3.50			
19		2.20	2.50	2.40	2.90	4.60	6.60	4.70	3.50			
20			2.50	2.40	2.90	4.30	6.30	4.70	3.40			
21			2.50	2.50	3.00	3.90	6.00	4.80	3.30			
22		2.90	2.50	2.50	3.30	3.70	5.80	4.80	3.30			
23		2.90	2.50	2.50	3.50	3.60	5.70	4.70	3.30			
24		2.90	2.50	2.60	3.40	3.50	5.60	4.70	3.30			
25		3.10	2.50	2.60	3.30	3.40	5.60	4.60	3.30			
26		3.30	2.50	2.60	3.20	3.30	5.70	4.40	3.30			
27		3.20	2.50	2.60	4.00	3.20	5.90	4.30	3.30			
28		3.00	2.50	2.60	2.90	3.60	6.00	4.20	3.30			
29		2.90	2.50	2.60	3.00	4.00	5.90	4.30	3.30			
30		3.00	2.50	2.60		4.60	5.80	4.30	3.30			
31			2.50	2.60		4.00		4.30				
1904-5.												
1			2.80	3.0	3.1	3.8	3.95	4.3	3.8	2.2	2.85	2.65
2			2.90	3.0	3.1	4.0	3.92	4.1	3.9	2.3	2.85	2.6
3			2.68	3.05	3.0	4.0	4.0	4.3	3.9	3.0	2.85	2.6
4			2.50	2.95	3.0	4.0	4.0	5.0	3.9	3.1	2.85	2.62
5			2.50	2.9	3.0	3.95	4.1	5.2	3.85	3.2	2.85	2.8
6			3.30	2.9	3.0	3.92	4.1	5.3	3.75	3.1	2.85	2.7
7			2.80	2.9	3.05	3.9	4.15	6.8	3.7	3.1	2.85	2.7
8			2.90	3.0	3.02	3.85	4.05	5.8	3.72	3.1	2.85	2.7
9		2.80	2.75	3.0	3.0	3.85	4.0	5.2	3.75	3.0	2.85	2.7
10		3.00	2.80	2.95	2.9	3.9	3.95	5.5	3.7	2.75	2.85	2.65
11		2.80	2.75	2.92	2.8	3.6	4.0	6.2	3.7	2.75	2.85	2.65
12		2.72	2.72	2.85	3.1	3.6	4.1	5.8	3.65	2.75	2.85	2.7
13		2.65	2.75	3.0	3.1	3.65	4.1	5.6	3.65	2.85	2.85	2.68
14		2.70	2.90	3.05	3.1	3.8	3.9	5.4	3.68	2.95	2.85	2.7
15		2.70	2.80	3.0	3.2	3.85	3.85	5.2	3.4	2.9	2.85	2.7
16		2.70	2.80	3.0	3.3	3.67	3.85	4.1	3.1	2.9	2.85	2.72
17		2.70	2.80	3.0	3.3	3.65	3.82	4.3	3.0	2.95	2.85	2.6
18		2.70	2.90	3.0	3.3	3.6	3.9	4.1	3.0	2.98	2.85	2.6
19		2.65	2.85	3.0	3.2	3.62	3.85	4.1	3.05	2.99	2.85	2.65
20		2.65	2.90	3.0	3.2	3.7	3.85	4.1	3.05	2.9	2.8	2.65
21		2.62	2.85	3.0	3.35	3.97	4.0	4.1	2.7	2.85	2.85	2.7
22		2.95	2.85	3.0	3.45	3.97	4.25	4.0	2.5	2.85	2.85	2.7
23		2.68	2.82	3.1	3.6	3.95	4.0	4.0	2.3	2.8	2.8	2.65
24		2.62	2.78	3.3	3.45	3.8	4.0	4.0	2.3	2.8	2.8	2.7
25		2.98	2.85	3.3	3.7	3.75	4.1	3.9	2.2	2.8	2.85	2.7
26		2.68	2.75	3.25	3.9	4.1	4.65	3.85	2.2	2.8	2.8	2.7
27		2.62	2.75	3.35	3.85	4.1	4.25	3.8	3.3	2.8	2.8	2.72
28		2.62	2.80	3.5	3.8	4.0	4.3	3.8	3.25	2.85	2.8	2.7
29		2.95	2.85	3.4		4.0	4.55	3.8	2.35	2.85	2.75	2.7
30		2.80	3.00	3.2		3.9	4.5	3.8	2.2	2.85	2.7	2.68
31			3.25	3.1		3.9		3.75		2.85	2.7	

Daily gage height, in feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	2.7	2.85	2.8	3.2	3.1	3.25	6.0	4.0	5.5	3.1	2.85	2.7
2	^a 3.7	2.8	2.85	3.1	3.1	3.25	5.8	4.0	5.5	3.1	2.85	2.7
3	2.85	2.8	2.8	3.1	3.0	3.35	5.0	3.95	5.5	3.3	2.8	2.7
4	2.7	2.8	2.8	3.15	3.2	3.4	4.9	4.0	5.4	3.3	2.8	2.7
5	2.7	^a 3.8	2.75	3.18	3.25	3.25	4.6	4.1	5.3	3.3	2.8	2.7
6	2.7	2.8	2.75	3.1	3.1	3.25	4.5	4.0	5.3	3.3	2.8	2.7
7	2.7	2.75	2.8	3.15	3.1	4.35	4.9	4.0	5.0	3.2	2.8	2.7
8	2.7	2.8	2.8	3.2	3.1	4.7	4.7	4.0	4.9	4.5	2.8	2.7
9	2.75	2.85	2.8	3.2	3.1	5.0	5.0	4.5	4.95	3.2	2.8	2.7
10	2.75	2.85	2.8	3.2	3.25	5.7	4.5	4.0	4.8	3.05	2.8	2.7
11	2.75	2.85	2.85	3.22	3.25	5.8	5.0	4.0	4.5	3.0	2.8	2.7
12	^a 3.3	2.75	2.85	3.2	3.25	4.5	4.5	4.0	4.6	3.0	2.85	2.75
13	2.75	2.7	2.85	3.2	3.3	4.5	4.6	4.0	4.5	3.0	2.95	2.8
14	2.75	2.7	2.8	3.25	3.3	4.6	5.0	5.6	4.4	3.0	2.95	2.85
15	2.75	2.8	2.8	3.25	3.3	4.65	4.1	4.5	4.3	3.0	2.9	2.9
16	2.8	2.8	2.85	3.2	3.2	3.7	5.0	5.6	4.6	3.0	2.85	2.9
17	2.85	2.8	2.8	3.2	3.3	3.7	4.95	4.5	4.4	3.0	2.85	2.8
18	2.85	^a 3.0	2.8	3.22	3.1	3.8	4.9	4.5	4.3	3.0	2.85	2.85
19	2.85	2.85	2.8	3.25	3.25	3.85	4.9	4.3	4.0	3.0	2.8	2.7
20	2.8	2.8	2.8	3.25	3.3	3.95	4.9	4.0	4.0	3.0	2.8	2.7
21	2.8	2.8	2.8	3.0	3.4	4.0	5.0	4.5	4.0	2.9	2.8	2.7
22	2.85	2.75	2.8	3.05	3.45	3.9	5.0	4.6	3.7	2.9	2.8	2.7
23	2.8	2.75	3.0	3.05	3.45	3.95	5.25	4.5	4.0	2.9	2.85	2.7
24	2.85	2.8	2.9	3.10	3.4	6.7	5.0	4.5	4.0	2.9	2.85	2.7
25	2.85	2.8	2.85	3.1	3.4	5.8	5.5	4.5	4.0	2.85	2.85	2.7
26	2.85	2.8	2.9	3.05	3.45	5.0	5.0	4.0	4.0	2.85	2.8	2.7
27	^a 3.1	2.85	3.1	3.05	3.3	6.3	4.2	4.3	4.0	2.85	2.8	2.7
28	2.85	2.85	3.1	3.05	3.35	5.9	4.0	4.6	3.4	2.85	2.75	2.7
29	2.8	2.85	3.1	3.1	-----	5.6	4.0	7.15	3.65	2.85	2.7	2.7
30	2.75	2.85	3.1	3.1	-----	6.15	4.0	6.75	4.9	2.85	2.7	2.7
31	2.75	-----	3.1	3.5	-----	6.7	-----	6.0	-----	2.85	2.7	-----
1906-7.												
1	2.7	2.8	3.0	3.6	4.0	5.3	5.3	4.8	4.3	3.7	2.8	2.8
2	2.7	2.8	2.95	3.5	4.0	5.3	5.3	4.5	4.2	3.7	2.8	2.9
3	2.7	2.8	3.0	3.5	4.0	5.3	5.3	4.4	4.15	3.8	2.8	3.2
4	2.8	2.9	3.0	3.9	4.0	4.2	5.3	4.4	4.0	3.9	2.8	3.1
5	2.8	2.9	3.0	3.6	6.0	4.2	5.3	4.4	3.95	3.0	2.8	3.0
6	2.8	2.85	3.0	3.5	5.5	4.2	5.3	4.4	3.9	3.05	2.8	3.0
7	2.8	2.8	3.1	3.6	4.9	4.2	6.5	4.4	3.85	3.1	2.8	3.0
8	2.8	2.85	3.1	3.8	4.6	4.2	6.8	4.5	3.8	3.1	2.8	3.0
9	2.8	2.8	3.1	3.8	4.5	4.2	6.6	4.5	3.8	3.1	2.8	3.0
10	2.8	2.9	3.1	3.8	4.5	4.2	5.6	4.5	3.7	3.1	2.8	3.0
11	2.8	2.95	3.1	3.8	4.5	4.2	5.4	4.4	3.8	3.1	2.8	3.1
12	2.8	3.3	3.1	4.0	4.5	4.2	5.4	4.5	3.8	3.2	2.8	3.25
13	2.7	3.1	3.1	4.0	4.5	4.2	5.4	4.5	3.7	3.2	2.8	3.25
14	2.8	3.2	3.15	4.0	4.5	4.8	5.3	4.5	3.85	3.0	2.8	3.2
15	2.8	3.25	3.1	4.6	4.5	4.8	5.5	4.4	3.7	3.0	2.8	3.2
16	2.85	3.15	3.1	4.5	4.5	4.8	5.5	4.4	3.7	3.0	2.75	3.2
17	2.85	3.1	3.1	4.5	4.5	5.0	5.1	4.6	3.7	3.0	2.75	3.2
18	2.85	3.05	3.1	4.4	4.5	6.1	5.1	4.7	3.6	3.0	2.75	3.1
19	2.85	3.1	3.1	4.5	5.0	6.5	5.1	4.75	3.6	3.0	2.7	3.0
20	2.85	3.1	3.1	4.5	5.0	6.1	5.0	4.7	3.5	3.0	2.7	2.9
21	2.85	3.1	3.1	4.5	5.0	^b 5.85	5.0	4.7	3.5	3.0	2.6	2.8
22	2.80	3.1	3.15	4.5	5.0	5.3	5.0	4.5	3.5	3.0	2.6	2.8
23	2.80	3.1	3.8	4.5	5.3	5.3	5.0	4.4	3.5	3.0	2.6	2.8
24	2.80	3.1	3.8	4.4	5.3	5.3	4.95	4.3	3.5	3.0	3.2	2.8
25	2.80	3.1	4.0	4.35	5.3	5.3	4.8	4.25	3.6	3.0	2.7	2.8
26	2.85	3.1	4.8	4.0	5.3	5.3	4.8	4.2	3.55	2.9	2.7	2.8
27	2.85	2.8	4.5	4.0	5.3	5.3	4.8	4.2	3.6	2.9	2.6	2.8
28	2.80	2.8	4.1	4.0	5.3	5.3	4.8	4.15	3.6	2.9	2.6	2.8
29	2.80	2.8	4.0	4.0	-----	5.3	5.0	4.2	3.6	2.9	2.6	2.8
30	2.80	3.0	3.9	4.0	-----	5.3	4.8	4.2	3.6	2.9	2.8	2.8
31	2.80	-----	3.6	4.0	-----	5.3	-----	4.15	-----	2.8	2.8	-----

^a River flooded to run logs; water stored during preceding night; no change in normal flow.^b Gage read 5.6 feet after log jam went out.

Daily gage height, in feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	2.8	2.8	2.8	3.4	3.1	3.4	4.8	5.2	3.8	3.5	3.0	2.8
2.....	2.8	2.8	2.8	3.4	3.0	3.5	4.6	5.2	3.8	3.4	3.0	2.8
3.....	2.8	2.8	2.8	3.4	3.0	3.5	5.3	5.0	3.8	3.4	3.0	2.8
4.....	2.8	2.8	2.8	3.5	3.0	3.5	5.3	4.8	3.8	3.4	3.0	2.8
5.....	2.75	2.8	2.8	3.5	3.0	3.5	5.3	4.8	3.9	3.4	3.0	2.8
6.....	2.75	2.8	2.8	3.5	3.0	3.5	5.3	4.8	4.1	3.3	3.0	2.8
7.....	2.75	2.8	2.8	3.5	3.0	3.5	5.3	4.6	4.1	3.3	2.9	2.8
8.....	2.75	2.8	2.8	3.4	3.0	3.6	5.6	4.5	4.1	3.3	2.8	2.8
9.....	2.75	2.8	2.8	3.3	3.0	3.7	5.8	4.4	4.1	3.2	2.8	2.8
10.....	2.75	2.8	2.9	3.2	3.0	3.8	6.0	4.3	4.1	3.1	2.8	2.8
11.....	2.8	2.8	2.9	3.2	3.0	3.9	6.4	4.3	4.1	3.0	2.8	2.8
12.....	2.8	2.8	2.9	3.3	3.0	4.0	6.1	4.3	4.1	3.0	2.8	2.8
13.....	2.8	2.8	2.9	3.3	3.0	4.9	5.8	4.4	4.1	3.1	2.8	2.8
14.....	2.8	2.8	2.9	3.3	3.0	5.0	5.6	4.5	4.1	3.1	2.8	2.9
15.....	2.8	2.8	2.9	3.3	3.0	5.6	5.4	4.5	4.0	3.1	2.8	2.9
16.....	2.8	2.8	2.9	3.3	3.1	7.8	5.4	4.5	4.1	3.2	2.8	2.9
17.....	2.8	2.8	2.9	3.3	3.1	8.0	5.4	4.4	4.1	3.1	2.8	2.9
18.....	2.8	2.8	2.9	3.3	3.1	7.6	5.4	4.4	4.1	3.6	2.8	2.9
19.....	2.8	2.8	2.9	3.3	3.1	6.5	5.6	4.4	4.0	3.4	2.8	2.9
20.....	2.8	2.85	2.9	3.3	3.0	5.8	5.8	4.4	4.0	3.2	2.8	2.8
21.....	2.8	2.85	2.9	3.2	3.0	5.5	6.0	4.4	3.9	3.0	2.8	2.8
22.....	2.8	2.85	3.1	3.2	3.0	5.2	5.8	4.4	3.9	3.0	2.8	2.8
23.....	2.8	2.9	3.2	3.2	3.0	4.8	5.6	4.4	3.8	3.0	2.8	2.8
24.....	2.8	2.95	3.3	3.2	3.0	4.8	5.4	4.2	3.8	3.0	2.7	2.8
25.....	2.8	2.95	3.4	3.2	3.0	4.8	5.4	4.0	3.7	3.0	2.7	2.8
26.....	2.8	2.8	3.5	3.1	3.1	4.8	5.3	4.0	3.6	3.0	2.7	2.8
27.....	2.8	2.8	3.6	3.1	3.2	4.8	5.3	3.8	3.6	3.0	2.7	2.8
28.....	2.8	2.8	3.6	3.1	3.3	4.8	5.3	3.8	3.6	2.9	2.7	2.8
29.....	2.8	2.8	3.6	3.1	3.3	4.8	5.2	3.8	3.6	3.0	2.8	2.8
30.....	2.8	2.8	3.5	3.1	-----	4.8	5.2	3.8	3.6	3.0	2.8	2.8
31.....	2.8	-----	3.4	3.1	-----	4.8	-----	3.7	-----	3.0	2.8	-----
1908-9.												
1.....	2.8	3.0	2.7	2.9	3.1	3.5	4.4	4.6	4.6	3.3	2.8	2.6
2.....	2.9	3.0	2.8	2.9	3.2	3.8	4.4	4.6	4.8	3.3	2.8	2.8
3.....	2.9	3.0	2.8	3.0	3.2	3.8	4.4	4.6	4.8	3.2	2.7	2.8
4.....	2.9	3.0	2.9	3.0	3.2	3.8	4.4	4.6	4.6	3.2	2.7	3.0
5.....	2.8	2.9	2.9	3.0	3.2	4.2	4.4	4.6	4.4	3.0	2.7	3.0
6.....	2.8	2.9	2.9	3.0	3.1	3.9	4.4	4.6	4.2	3.0	2.7	3.0
7.....	2.9	2.9	2.9	3.0	3.1	3.8	4.4	4.4	4.1	3.0	2.6	3.0
8.....	2.9	2.9	2.9	3.0	3.1	3.8	4.4	4.4	4.1	2.8	2.6	3.0
9.....	2.9	2.9	2.9	3.0	3.1	3.6	4.2	4.4	4.0	3.0	2.6	3.0
10.....	2.9	2.9	2.9	3.0	3.1	3.5	4.2	4.6	4.0	3.2	2.6	3.1
11.....	2.9	2.9	2.9	3.0	3.1	3.4	4.4	4.6	4.0	3.0	2.6	3.2
12.....	2.9	2.9	2.9	3.0	3.1	3.4	4.4	4.4	3.9	3.0	2.5	3.2
13.....	2.9	2.9	3.0	3.0	3.2	3.4	4.4	4.4	4.0	3.0	2.5	3.0
14.....	2.9	2.9	3.0	3.0	3.3	3.6	4.4	4.4	4.0	3.0	2.5	3.0
15.....	3.0	3.1	2.9	3.0	3.4	3.9	4.4	4.5	4.0	3.0	2.5	3.0
16.....	3.0	3.2	2.8	3.0	3.8	4.2	4.6	4.4	4.0	2.8	2.1	3.0
17.....	2.9	3.3	2.8	3.4	3.8	4.2	4.8	4.2	4.0	2.8	2.4	3.0
18.....	2.9	3.3	2.8	3.6	3.8	4.2	4.6	4.2	3.8	2.8	2.4	3.0
19.....	2.9	3.3	2.8	3.6	3.8	4.2	4.4	4.1	4.1	2.9	2.4	3.0
20.....	2.9	3.3	2.8	4.3	3.8	4.2	4.4	4.1	4.0	2.9	2.4	3.0
21.....	2.9	3.3	2.8	4.7	3.4	4.2	4.4	4.1	3.9	2.9	2.5	3.0
22.....	2.9	3.3	2.8	3.9	3.2	3.9	4.2	4.1	3.8	2.8	2.5	3.0
23.....	2.9	3.3	2.8	3.8	3.2	3.9	4.2	4.0	3.6	2.8	2.6	3.0
24.....	2.9	3.3	2.9	3.6	3.2	3.9	4.2	4.0	3.4	2.7	2.6	3.0
25.....	2.9	3.3	2.9	3.4	3.2	4.0	4.2	4.0	3.4	2.7	2.6	3.0
26.....	2.9	3.3	2.9	3.2	3.2	4.2	4.4	4.0	3.4	2.6	2.6	3.0
27.....	2.9	3.2	2.9	3.0	3.2	4.4	4.8	4.4	3.4	2.7	2.6	3.0
28.....	2.9	3.2	2.9	3.0	3.4	4.4	4.8	4.6	3.3	2.6	2.6	3.0
29.....	3.0	3.0	2.9	3.0	-----	4.4	4.8	4.8	3.3	2.7	2.6	3.2
30.....	3.0	2.8	2.9	3.0	-----	4.6	4.6	4.6	3.3	2.8	2.6	3.1
31.....	3.0	-----	2.9	3.0	-----	4.6	-----	4.6	-----	2.8	2.6	-----

Daily gage height, in feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1909-10.							1909-10.						
1	3.0	3.0	3.5	3.0	4.4	5.5	16	2.95	2.8	4.0	3.0	3.8	-----
2	3.0	3.05	3.5	3.05	4.4	6.6	17	2.95	2.8	3.8	3.0	3.8	-----
3	3.0	3.0	3.5	3.0	4.4	6.6	18	2.95	2.9	3.5	3.0	3.8	-----
4	3.0	2.9	3.5	3.0	4.2	-----	19	2.95	3.0	3.5	3.0	3.8	-----
5	3.0	3.0	3.4	3.0	4.2	-----	20	2.95	3.0	3.4	3.0	3.8	-----
6	3.1	3.0	3.4	3.0	4.1	-----	21	2.95	3.3	3.4	3.0	3.8	-----
7	3.0	2.9	3.5	3.0	4.1	-----	22	2.95	3.3	3.4	3.1	3.8	-----
8	3.0	2.9	3.8	3.0	4.0	-----	23	2.95	3.8	3.4	3.1	3.8	-----
9	3.0	2.9	4.4	2.9	4.0	-----	24	2.95	4.4	3.4	4.0	3.8	-----
10	3.0	2.9	3.8	2.9	3.9	-----	25	2.95	4.2	3.4	4.1	3.8	-----
11	2.9	2.9	3.8	2.9	3.9	-----	26	2.95	4.0	3.4	4.3	3.8	-----
12	2.9	2.9	4.4	2.9	3.9	-----	27	2.95	3.7	3.2	4.7	4.1	-----
13	2.9	2.9	4.0	2.9	3.9	-----	28	2.9	3.6	3.1	4.4	4.3	-----
14	2.95	2.9	4.05	2.8	3.8	-----	29	2.9	3.5	3.1	4.2	-----	-----
15	2.95	2.85	4.05	2.9	3.9	-----	30	2.9	3.55	3.05	4.4	-----	-----
							31	2.9	-----	3.0	4.4	-----	-----

NOTE.—Ice present during January, February, and December, 1905; Mar. 19-21, Nov. 19-22, 24, Dec. 1-8, 14-17, 1906; Dec. 28, 1906, to Feb. 15, 1907; Jan. 21 to Feb. 6, 1908; Dec. 15, 1908, to Jan. 21, 1909; Jan. 31 to Feb. 7, 1909; Nov. 16-18, Dec. 3-8, 1909; and Dec. 19, 1909, to Feb. 28, 1910.

Gage taken out by high water Mar. 4, 1910.

Daily discharge, in second-feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1	-----	50	450	160	240	390	1,520	2,220	720	194	-----	-----
2	-----	50	450	160	240	240	1,790	1,970	799	194	-----	-----
3	-----	50	340	160	340	340	2,260	1,850	720	194	-----	-----
4	-----	50	240	160	290	340	2,260	1,720	720	194	-----	-----
5	-----	55	200	160	290	390	2,160	1,380	720	194	-----	-----
6	-----	40	200	160	290	510	2,260	1,500	720	194	-----	-----
7	-----	55	200	160	240	1,010	2,360	1,280	720	194	-----	-----
8	-----	40	200	160	240	2,260	2,360	2,220	720	194	-----	-----
9	-----	55	160	160	290	1,610	2,960	1,380	645	194	-----	-----
10	-----	55	160	160	290	1,250	3,490	1,280	645	194	-----	-----
11	-----	55	160	200	250	1,010	3,820	1,380	574	194	-----	-----
12	-----	55	160	160	290	930	4,260	1,070	507	194	-----	-----
13	-----	40	160	160	240	850	4,480	974	507	194	-----	-----
14	-----	46	160	160	290	780	4,610	1,070	444	194	-----	-----
15	-----	52	160	160	340	1,010	4,480	1,280	386	153	-----	-----
16	-----	58	160	160	340	930	3,980	1,280	386	153	-----	-----
17	-----	64	160	130	340	1,090	3,720	1,170	333	-----	-----	-----
18	-----	69	160	130	340	1,250	3,600	1,280	284	-----	-----	-----
19	-----	75	160	130	340	1,610	3,470	1,170	284	-----	-----	-----
20	-----	160	160	130	340	1,340	3,100	1,170	238	-----	-----	-----
21	-----	250	160	160	390	1,010	2,720	1,280	194	-----	-----	-----
22	-----	340	160	160	570	850	2,470	1,280	194	-----	-----	-----
23	-----	340	160	160	710	780	2,340	1,170	194	-----	-----	-----
24	-----	340	160	200	640	710	2,220	1,170	194	-----	-----	-----
25	-----	450	160	200	570	640	2,220	1,070	194	-----	-----	-----
26	-----	570	160	200	1,090	570	2,340	883	194	-----	-----	-----
27	-----	510	160	200	340	510	2,580	799	194	-----	-----	-----
28	-----	390	160	200	390	780	2,720	720	194	-----	-----	-----
29	-----	340	160	200	-----	1,090	2,580	799	194	-----	-----	-----
30	-----	390	160	200	-----	1,610	2,470	799	194	-----	-----	-----
31	-----	-----	160	200	-----	1,090	-----	799	-----	-----	-----	-----

Daily discharge, in second-feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1			39	84	114	425	518	785	425	3	48	22
2			57	84	114	550	498	620	485	5	48	18
3			26	99	84	550	550	785	485	84	48	18
4			14	71	84	550	550	1,500	485	114	48	20
5			14	58	84	517	620	1,720	455	148	43	38
6			194	58	84	498	620	1,850	397	114	48	26
7			39	58	99	485	660	2,160	370	114	48	26
8			57	84	90	455	585	2,470	384	114	48	26
9		39	33	84	84	455	550	1,720	308	84	48	26
10		83	39	71	58	485	518	2,090	370	32	48	22
11		39	33	64	38	320	550	2,280	370	32	48	22
12		30	30	48	114	320	620	2,470	345	32	48	26
13		23	33	84	114	345	620	2,220	345	48	48	24
14		28	57	99	114	425	485	1,970	360	71	48	26
15		28	39	84	148	455	455	1,720	228	58	48	26
16		28	39	84	186	353	455	620	114	58	48	28
17		28	39	84	186	345	410	785	84	71	48	18
18		28	57	84	186	320	485	620	84	79	48	18
19		23	47	84	148	330	455	620	99	81	48	22
20		23	57	84	148	370	455	620	99	58	38	22
21		21	47	84	207	534	550	620	26	48	48	26
22		69	47	84	250	534	742	550	12	48	48	26
23		26	41	114	320	518	550	550	5	38	38	22
24		21	37	186	250	425	550	550	5	38	38	26
25		77	47	186	370	398	620	485	3	38	48	26
26		26	33	167	485	620	680	455	3	38	38	26
27		21	33	207	455	620	742	425	186	38	38	28
28		21	39	272	425	550	785	425	167	48	38	26
29		69	47	228	.....	550	1,020	425	6	48	32	26
30		39	83	148	.....	485	970	425	3	48	26	24
31		.....	173	114	.....	485	.....	398	.....	48	26	.....
1905-6.												
1	26	48	38	140	108	157	2,140	510	.....	108	49	28
2	37	38	48	108	108	157	1,980	510	.....	108	49	28
3	48	38	38	108	82	192	1,240	482	.....	174	40	28
4	26	38	38	124	140	210	1,160	510	.....	174	40	28
5	26	38	32	134	157	157	920	570	.....	174	40	28
6	26	38	32	108	108	157	840	510	.....	174	40	28
7	26	32	38	124	108	730	1,160	510	.....	140	40	28
8	26	38	38	140	108	735	1,000	510	.....	840	40	28
9	32	48	38	140	108	740	1,240	840	.....	140	40	28
10	32	48	38	140	157	745	840	510	.....	95	40	28
11	32	48	48	147	157	790	1,240	510	.....	82	40	28
12	32	32	48	140	157	840	840	510	.....	82	49	34
13	32	26	48	140	174	840	920	510	.....	82	70	40
14	32	26	38	157	174	920	1,240	660	.....	82	70	49
15	32	38	38	157	174	960	570	400	.....	82	58	58
16	38	38	48	140	140	345	1,240	660	.....	82	49	58
17	48	38	38	140	174	345	1,200	400	.....	82	49	40
18	48	43	38	147	108	400	1,160	400	.....	82	49	49
19	48	48	38	157	157	415	1,160	350	.....	82	40	28
20	38	38	38	157	174	430	1,160	360	.....	82	40	28
21	38	38	38	82	210	440	1,240	650	.....	58	40	28
22	48	32	38	95	230	455	1,240	720	.....	58	40	28
23	38	32	84	95	230	482	1,460	650	.....	58	49	28
24	48	38	58	108	210	2,820	1,240	650	.....	58	49	28
25	48	38	48	108	210	1,960	1,690	650	.....	49	49	28
26	48	38	58	95	230	1,240	1,240	260	.....	49	40	28
27	48	48	114	95	174	2,420	630	530	.....	49	40	28
28	48	48	114	95	192	2,050	510	720	.....	49	34	28
29	38	48	114	108	.....	1,780	510	2,950	.....	49	28	28
30	32	48	114	108	.....	2,280	510	2,580	.....	49	28	28
31	32	.....	114	250	.....	2,820	.....	1,880	.....	49	28	.....

Daily discharge, in second-feet, of Grande Ronde River at Ilfeld, Oreg., for 1903-1909—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	28	40	66	295	-----	1,510	1,510	1,080	695	345	40	40
2.....	28	40	66	250	-----	1,510	1,510	840	630	345	40	58
3.....	28	40	66	250	-----	1,510	1,510	765	600	400	40	140
4.....	40	58	66	455	-----	630	1,510	765	510	455	40	108
5.....	40	58	66	295	-----	630	1,510	765	482	82	40	82
6.....	40	49	66	250	-----	630	1,510	765	455	95	40	82
7.....	40	40	108	-----	630	2,620	765	428	108	40	40	82
8.....	40	49	108	-----	630	2,920	840	400	108	40	40	82
9.....	40	40	108	-----	840	630	2,720	840	400	108	40	82
10.....	40	58	108	-----	840	630	1,780	840	345	108	40	82
11.....	40	70	108	-----	840	630	1,600	765	400	108	40	108
12.....	40	174	108	-----	840	630	1,600	840	400	140	40	157
13.....	28	108	108	-----	840	630	1,600	840	345	140	40	157
14.....	40	140	124	-----	840	630	1,510	840	428	82	40	140
15.....	40	157	108	-----	840	630	1,690	765	345	82	40	140
16.....	49	124	108	-----	840	630	1,690	765	345	82	34	140
17.....	49	108	108	-----	840	765	1,330	920	345	82	34	140
18.....	49	95	108	-----	840	1,780	1,330	1,000	295	82	34	108
19.....	49	108	108	-----	1,240	2,050	1,330	1,040	295	82	28	82
20.....	49	108	108	-----	1,240	1,690	1,240	1,000	250	82	28	58
21.....	49	108	108	-----	1,240	1,780	1,240	1,000	250	82	18	40
22.....	40	108	124	-----	1,240	1,510	1,240	840	250	82	18	40
23.....	40	108	400	-----	1,510	1,510	1,240	765	250	82	18	40
24.....	40	108	400	-----	1,510	1,510	1,200	695	250	82	140	40
25.....	40	108	510	-----	1,510	1,510	1,080	662	295	82	28	40
26.....	49	108	1,080	-----	1,510	1,510	1,080	630	272	58	28	40
27.....	49	40	840	-----	1,510	1,510	1,080	630	295	58	18	40
28.....	40	40	570	-----	1,510	1,510	1,080	600	295	58	18	40
29.....	40	40	510	-----	-----	1,510	1,240	630	295	58	18	40
30.....	40	82	455	-----	-----	1,510	1,080	630	295	58	40	40
31.....	40	-----	295	-----	-----	1,510	-----	600	-----	40	-----	-----
1907-8.												
1.....	40	40	40	165	73	165	1,080	1,420	338	205	50	20
2.....	40	40	40	165	50	205	910	1,420	338	165	50	20
3.....	40	40	40	165	50	205	1,510	1,240	338	165	50	20
4.....	40	40	40	205	50	205	1,510	1,080	338	165	50	20
5.....	34	40	40	205	50	205	1,510	1,080	390	165	50	20
6.....	34	40	40	205	50	205	1,510	1,080	520	130	50	20
7.....	34	40	40	205	50	205	1,510	910	520	130	33	20
8.....	34	40	40	165	50	245	1,780	830	520	130	20	20
9.....	34	40	40	130	50	290	1,960	750	520	100	20	20
10.....	34	40	58	100	50	338	2,140	670	520	73	20	20
11.....	40	40	58	100	50	390	2,520	670	520	50	20	20
12.....	40	40	58	130	50	450	2,230	670	520	50	20	20
13.....	40	40	58	130	50	1,160	1,960	750	520	73	20	20
14.....	40	40	58	130	50	1,240	1,780	830	520	73	20	33
15.....	40	40	58	130	50	1,780	1,600	830	450	73	20	33
16.....	40	40	58	130	73	4,000	1,600	830	520	100	20	33
17.....	40	40	58	130	73	4,240	1,600	750	520	165	20	33
18.....	40	40	58	130	73	3,780	1,600	750	520	245	20	33
19.....	40	40	58	130	73	2,620	1,780	750	450	165	20	33
20.....	40	49	58	130	50	1,960	1,960	750	450	100	20	20
21.....	40	49	58	100	50	1,690	2,140	750	390	50	20	20
22.....	40	49	108	100	50	1,420	1,960	750	390	50	20	20
23.....	40	58	140	100	50	1,080	1,780	750	338	50	20	20
24.....	40	70	174	100	50	1,080	1,600	590	338	50	12	20
25.....	40	70	210	100	50	1,080	1,600	450	290	50	12	20
26.....	40	40	250	73	73	1,080	1,510	450	245	50	12	20
27.....	40	40	295	73	100	1,080	1,510	338	245	50	12	20
28.....	40	40	295	73	130	1,080	1,510	338	245	33	12	20
29.....	40	40	295	73	130	1,080	1,420	338	245	50	20	20
30.....	40	40	250	73	-----	1,080	1,420	338	245	50	20	20
31.....	40	-----	210	73	-----	1,080	-----	290	-----	50	-----	-----

Daily discharge, in second-feet, of Grande Ronde River at Hilgard, Oreg., for 1903-1909—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	20	50	12	31	85	210	750	910	910	145	26	10
2.....	33	50	20	31	115	340	750	910	1,080	145	26	26
3.....	33	50	20	46	115	340	750	910	1,080	115	16	26
4.....	33	50	33	46	115	340	750	910	910	115	16	61
5.....	20	33	33	46	115	590	750	910	750	61	16	61
6.....	20	33	33	46	85	390	750	910	590	61	16	61
7.....	33	33	33	46	85	340	750	750	520	61	10	61
8.....	33	33	33	46	85	340	750	750	520	26	10	61
9.....	33	33	33	46	85	250	590	750	450	61	10	61
10.....	33	33	33	46	85	210	590	910	450	115	10	85
11.....	33	33	33	46	85	175	750	910	450	61	10	115
12.....	33	33	33	46	85	175	750	750	390	61	7	115
13.....	33	33	50	46	115	175	750	750	450	61	7	61
14.....	33	33	50	46	145	250	750	750	450	61	7	61
15.....	50	73	33	46	175	390	750	850	450	61	7	61
16.....	50	100	20	46	340	590	910	750	450	26	5	61
17.....	33	130	20	131	340	590	1,080	590	450	26	5	61
18.....	33	130	20	250	340	590	910	590	340	26	5	61
19.....	33	130	20	250	340	590	750	520	520	41	5	61
20.....	33	130	20	670	340	590	750	520	450	41	5	61
21.....	33	130	20	995	175	590	750	520	390	41	7	61
22.....	33	130	20	390	115	390	590	520	340	26	7	61
23.....	33	130	20	340	115	390	590	450	250	26	10	61
24.....	33	130	33	250	115	390	590	450	175	16	10	61
25.....	33	130	33	175	115	450	590	450	175	16	10	61
26.....	33	130	33	115	115	590	750	450	175	10	10	61
27.....	33	100	33	61	115	750	1,080	750	175	16	10	61
28.....	33	100	33	61	175	750	1,080	910	145	10	10	61
29.....	50	50	33	61	.....	750	1,080	1,080	145	16	10	115
30.....	50	20	33	61	.....	910	910	910	145	26	10	85
31.....	50	.....	33	61	.....	910	.....	910	.....	26	10	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1909.											
1.....	61	61	210	11.....	41	41	340	21.....	51	145	149
2.....	61	73	210	12.....	41	41	750	22.....	51	145	149
3.....	61	61	210	13.....	41	41	450	23.....	51	340	149
4.....	61	41	210	14.....	51	41	485	24.....	51	750	149
5.....	61	61	175	15.....	51	34	485	25.....	51	590	149
6.....	85	61	175	16.....	51	26	450	26.....	51	450	149
7.....	61	41	210	17.....	51	26	340	27.....	51	295	98
8.....	61	41	340	18.....	51	41	210	28.....	41	250	72
9.....	61	41	750	19.....	51	61	178	29.....	41	210	72
10.....	61	41	340	20.....	51	61	149	30.....	41	230	62
								31.....	41	.....	52

NOTE.—Daily discharge determined as follows:

1903 and 1904. Nov. 5, 1903, to Apr. 12, 1904, from rating curve well defined between 40 and 1,000 second-feet; Apr. 13 to Dec. 31, 1904, from curve fairly well defined between 30 and 2,500 second-feet; Apr. 26, May 8 and 11, Oct. 2, 12, and 27, Nov. 5 and 18, 1904, interpolated, as stream was being used for logging operations.

1905. From rating curve well defined above 40 second-feet.

1906 and 1907. From curve fairly well defined between 30 and 1,200 second-feet. Estimated because of ice, as follows: Dec. 1-6, 1906; Jan. 7 to Feb. 4, 1907, 250 second-feet; Feb. 5-8, 1907, 840 second-feet. Discharge Mar. 8-11 and May 14 to June 30, 1906, estimated, on account of obstruction of stream by logs, from measurements. Discharge Mar. 14-22, 1907, also estimated because of log obstructions.

1908. From poorly defined rating curve.

1909. From poorly defined rating curve. Discharge obtained from open-channel rating curve Jan. 1-17 reduced 25 per cent and Dec. 19-31 reduced 15 per cent to counteract effect of ice.

Estimates for days during the winter months other than those noted were probably affected by ice to a greater or less extent.

Observer made no notes concerning logs at any time after May 1, 1907, so that no corrections have been applied and records are accordingly subject to error.

Monthly discharge of Grande Ronde River at Hilgard, Oreg., for 1903-1909.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
November.....	570	40	170	10,100	B.
December.....	450	160	192	11,800	B.
January.....	200	130	168	10,300	C.
February.....	1,090	240	383	22,000	B.
March.....	2,260	240	928	57,100	B.
April.....	4,610	1,520	2,920	174,000	C.
May.....	2,220	720	1,270	78,100	B.
June.....	799	194	434	25,800	B.
July 1-16.....	194	153	189	6,000	B.
The period.....				395,000	
1904-5.					
November 9-30.....	83	21	35.9	1,570	B.
December.....	194	14	50.6	3,110	B.
January.....	272	48	108	6,641	C.
February.....	485	38	180	10,000	C.
March.....	620	320	461	28,400	B.
April.....	1,020	440	597	35,500	B.
May.....	2,470	398	1,130	69,300	B.
June.....	485	3	227	13,500	B.
July.....	148	3	60.6	3,730	C.
August.....	48	26	44.1	2,710	C.
September.....	38	18	24.3	1,450	C.
The period.....				176,000	
1905-6.					
October.....	48	26	37.1	2,280	B.
November.....	48	26	39.6	2,360	B.
December.....	114	32	54.6	3,390	C.
January.....	250	82	129	7,930	C.
February.....	230	82	159	8,830	C.
March.....	2,820	157	936	57,600	D.
April.....	2,180	510	1,120	66,600	C.
May.....	2,950	350	728	44,800	C.
June.....			^a 599	35,600	D.
July.....	840	49	114	7,010	B.
August.....	70	28	43.8	2,690	B.
September.....	58	28	32.4	1,930	B.
The year.....	2,950	26	333	241,000	
1906-7.					
October.....	49	28	40.8	2,510	B.
November.....	174	40	83.8	4,990	B.
December.....	1,080	66	233	14,300	C.
January.....	455		^a 260	16,000	D.
February.....	1,510		^a 956	53,100	C.
March.....	2,050	630	1,160	71,300	C.
April.....	2,920	1,080	1,520	90,400	C.
May.....	1,080	600	797	49,000	C.
June.....	695	250	371	22,100	C.
July.....	455	40	124	7,620	B.
August.....	140	18	36.8	2,260	B.
September.....	157	40	82.3	4,900	B.
The year.....	2,920	18	472	338,000	
1907-8.					
October.....	40	34	38.8	2,390	B.
November.....	70	40	43.5	2,590	B.
December.....	295	40	106	6,520	C.
January.....	205	73	126	7,750	C.
February.....	130	50	62	3,570	C.
March.....	4,240	165	1,180	72,600	D.
April.....	2,520	910	1,680	100,000	D.
May.....	1,420	290	757	46,500	C.
June.....	520	245	410	24,400	C.
July.....	245	33	98.5	6,060	C.
August.....	50	12	24.9	1,530	D.
September.....	33	20	22.6	1,340	D.
The year.....	4,240	12	379	275,000	

^a Estimated.

Monthly discharge of Grande Ronde River at Hilgard, Oreg., for 1903-1909—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	50	20	34.5	2,120	D.
November.....	130	20	*75.8	4,510	D.
December.....	50	12	29.2	1,800	D.
January.....	995	31	148	9,100	D.
February.....	340	85	154	8,550	C.
March.....	910	175	462	28,400	B.
April.....	1,080	590	778	46,300	B.
May.....	1,080	450	741	45,600	B.
June.....	1,080	145	459	27,300	B.
July.....	145	10	51.6	3,170	C.
August.....	26	5	10.4	640	D.
September.....	115	10	64	3,810	C.
The year.....	1,080	5	251	181,000	
1909.					
October.....	85	41	52.7	3,240	C.
November.....	750	26	145	8,630	C.
December.....	750	52	255	15,700	D.

NOTE.—Comparison of monthly mean discharges of the Grande Ronde at Hilgard with those at the Elgin station below, where conditions are more favorable, indicates that the results obtained at the Hilgard station are as a whole fairly reliable, but that those for the early part of 1908 may be too large.

GRANDE RONDE RIVER AT ELGIN, OREG.

Location.—In sec. 14, T. 1 N., R. 39 E., at the county bridge, one-fourth mile east of the railroad station, at the lower end of the Grande Ronde Valley.

Records presented.—November 18, 1903, to September 30, 1910.

Drainage area.—1,350 square miles.

Gage.—Standard chain; vertical staff at same datum used prior to July 21, 1904.

Channel.—Heavy gravel and small bowlders; fairly permanent.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Ice forms for a considerable period each winter, and has probably introduced some error into past records.

Diversions.—Large part of low-water flow diverted above station for irrigation in Grande Ronde Valley. No storage developed.

Accuracy.—Results fairly good.

Discharge measurements of Grande Ronde River at Elgin, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
1903.				1906.			
Nov. 20	J. H. Lewis.....	1.65	186	May 18	R. S. Hall.....	3.34	1,030
22	.....do.....	2.62	574	June 29	.....do.....	2.93	666
				Dec. 10 ^b	Stevens and McGlashan	2.20	290
1904.				1907.			
May 12	Murphy and Sawyer...	4.87	3,460	May 6	I. E. Oakes.....	4.54	2,730
July 22	W. C. Sawyer.....	2.03	209	Sept. 14 ^c	E. F. Kriegsman.....	1.77	76
Aug. 22	.....do.....	1.48	50				
22	.....do.....	1.48	58	1908.			
Sept. 28	.....do.....	1.76	111	June 4	H. D. McGlashan.....	3.01	730
1905.				Oct. 17	L. R. Allen.....	2.01	156
Apr. 1	.....do.....	3.25	872	1909.			
May 22	.....do.....	3.48	1,000	Oct. 15 ^a	F. F. Henshaw.....	1.64	74.1
Sept. 21 ^a	.....do.....	1.48	37.5	1910.			
Nov. 30	R. S. Hall.....	1.74	80	Sept. 15 ^a	F. C. Ebert.....	1.22	24.8

^a Measured by wading.

^b Ice present.

^c Measurement doubtful.

Daily gage height, in feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1			2.8	1.80	2.10	3.20	4.40	5.50	4.20	2.50	1.65	1.50
2			3.0	1.90	2.00	3.20	4.40	5.40	4.30	2.40	1.65	1.50
3			3.0	1.80	2.00	3.00	4.50	5.30	4.30	2.40	1.65	1.55
4			2.8	1.90	2.10	3.00	4.50	5.20	4.30	2.40	1.65	1.55
5			2.4	1.90	2.20	3.00	4.80	5.20	4.20	2.40	1.65	1.55
6			2.4	1.90	2.20	3.40	5.00	5.10	4.10	2.30	1.60	1.55
7			2.4	1.90	2.20	3.50	5.00	5.10	4.20	2.30	1.60	1.55
8			2.4	1.90	2.10	4.90	5.00	5.00	4.10	2.40	1.60	1.50
9			2.2	1.80	2.00	4.80	5.20	4.90	4.10	2.50	1.60	1.50
10			2.1	1.70	1.90	4.80	5.70	4.90	4.10	2.50	1.60	1.50
11			2.2	1.90	1.80	4.80	6.20	4.90	4.00	2.50	1.60	1.55
12			2.3	1.90	1.90	4.60	6.50	4.90	3.90	2.50	1.60	1.45
13			2.3	1.90	1.90	4.40	6.80	4.90	3.80	2.40	1.55	1.45
14			2.3	2.00	2.10	4.20	7.00	4.90	3.70	2.40	1.55	1.50
15			2.3	2.10	2.20	4.10	7.60	4.90	3.70	2.40	1.55	1.50
16			2.4	2.20	3.00	4.10	7.60	4.90	3.60	2.30	1.50	1.50
17			2.3	2.40	3.00	4.10	7.60	4.80	3.60	2.30	1.50	1.50
18			2.2	2.20	2.90	4.10	7.60	4.80	3.60	2.20	1.50	1.50
19			2.1	2.10	2.70	4.20	7.60	4.80	3.60	2.10	1.50	1.45
20			2.2	2.10	2.70	4.30	7.20	4.80	3.50	2.00	1.50	1.45
21		2.1	2.2	1.80	2.70	4.40	7.00	4.80	3.40	2.00	1.45	1.45
22		2.6	2.3	2.10	2.70	4.30	6.80	4.80	3.20	2.00	1.45	1.45
23		2.9	2.2	2.20	3.20	4.10	6.60	4.80	3.10	2.00	1.45	1.50
24		3.0	2.1	2.10	3.70	3.90	6.20	4.80	3.00	1.95	1.45	1.50
25		3.1	1.9	2.00	3.50	3.80	5.90	4.80	2.90	1.90	1.45	1.55
26		3.2	1.8	2.20	3.50	3.60	5.80	4.80	2.80	1.85	1.45	1.65
27		3.1	1.4	2.30	3.50	3.40	5.70	4.70	2.80	1.80	1.45	1.65
28		2.9	1.4	2.20	3.20	3.50	5.60	4.60	2.80	1.75	1.50	1.80
29		2.8	1.4	2.20	3.10	3.70	5.60	4.40	2.70	1.80	1.55	1.80
30		2.8	1.1	2.20	-----	4.30	5.60	4.20	2.60	1.75	1.55	1.80
31		-----	1.9	2.20	-----	4.50	-----	4.20	-----	1.70	1.55	-----
1904-5.												
1	1.70	1.70	-----	2.6	2.25	3.0	3.25	3.5	3.2	2.3	1.4	1.35
2	1.70	1.70	1.75	2.45	2.4	2.95	3.2	3.5	3.25	2.3	1.4	1.35
3	1.70	1.70	1.75	2.45	2.1	3.05	3.35	3.55	3.25	2.2	1.35	1.35
4	1.60	1.70	1.70	2.25	2.05	3.1	3.3	3.75	3.25	2.15	1.35	1.35
5	1.60	1.70	1.70	2.25	2.05	3.1	3.3	4.0	3.3	-----	1.35	1.35
6	1.60	1.70	1.85	2.2	2.05	3.05	3.5	4.05	3.3	2.1	1.35	1.35
7	1.60	1.75	1.75	2.1	2.0	3.05	3.5	4.05	3.3	2.05	1.35	1.35
8	1.60	1.75	1.75	2.1	1.9	2.95	3.6	4.16	3.2	1.9	1.35	1.35
9	1.65	1.70	1.65	1.95	1.95	2.95	3.6	4.15	3.1	1.8	1.35	1.35
10	1.75	1.70	1.70	2.0	1.95	2.8	3.6	4.15	3.1	1.75	1.35	1.35
11	1.80	1.70	1.70	2.1	3.05	2.8	3.45	4.1	3.05	1.7	1.35	1.4
12	1.80	1.80	1.70	2.1	3.2	2.8	3.4	4.0	3.05	1.7	1.35	1.4
13	1.80	-----	1.75	2.05	2.7	2.75	3.3	3.9	3.05	1.65	1.35	1.4
14	1.85	1.70	1.80	2.05	2.3	2.85	3.2	3.9	3.05	1.65	1.35	1.4
15	1.85	1.70	1.80	2.05	1.95	3.0	3.1	3.8	3.0	1.65	1.35	1.4
16	1.85	1.80	1.70	2.05	1.95	3.1	3.15	3.75	2.95	1.65	1.35	1.4
17	1.90	1.75	1.70	2.05	2.05	3.0	3.15	3.7	2.8	1.6	1.4	1.4
18	2.00	1.70	1.75	2.05	1.9	2.85	3.1	3.75	2.7	1.6	1.4	1.4
19	1.90	1.70	1.80	2.1	1.9	3.0	3.1	3.75	2.65	1.55	1.4	1.45
20	1.80	1.75	1.80	2.2	1.95	3.0	3.15	3.65	2.6	1.55	1.4	1.45
21	1.75	1.75	1.80	2.05	2.1	3.15	3.4	3.55	2.55	1.6	1.35	1.5
22	1.75	1.75	1.75	-----	2.2	3.2	3.4	3.5	2.45	1.55	1.35	1.5
23	1.75	1.70	1.75	2.45	2.3	3.25	-----	3.4	2.45	1.5	1.35	1.5
24	1.80	1.75	1.80	2.45	2.4	3.2	3.45	3.4	2.5	1.5	1.35	1.5
25	1.80	1.70	1.80	2.45	2.6	3.15	3.6	3.4	2.3	1.5	1.35	1.5
26	1.75	1.75	2.60	2.55	2.8	3.2	3.65	3.3	2.45	1.5	1.35	1.5
27	1.75	1.75	2.70	2.55	3.0	3.3	3.7	3.2	2.45	1.45	1.35	1.65
28	1.75	1.75	2.85	2.55	3.0	-----	3.6	3.25	2.45	1.45	1.35	1.65
29	1.70	1.75	2.85	2.65	-----	3.35	3.6	3.2	2.45	1.4	1.3	1.7
30	1.70	1.75	2.70	2.45	-----	3.3	2.5	3.2	2.4	1.4	1.35	1.7
31	1.70	-----	2.80	2.3	-----	3.2	-----	3.2	-----	1.4	1.35	-----

Daily gage height, in feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1.7	1.7	1.75	1.9	2.0	2.55	5.45	4.2	5.75	3.0	1.55	1.5
2.....	1.65	1.7	1.75	1.85	1.9	2.5	5.4	4.2	5.75	2.6	1.55	1.5
3.....	1.65	1.7	1.7	1.9	1.95	2.45	5.2	4.2	5.8	2.6	1.5	1.5
4.....	1.65	1.7	1.75	1.95	1.95	2.45	5.0	4.15	5.75	2.6	1.55	1.5
5.....	1.65	1.7	1.8	1.85	1.9	2.45	4.8	4.0	5.7	2.5	1.55	1.5
6.....	1.7	1.75	1.8	1.9	1.95	2.4	4.7	3.95	5.5	2.5	1.55	1.5
7.....	1.65	1.85	1.8	1.9	2.0	2.45	4.75	3.95	5.5	2.45	1.55	1.5
8.....	1.65	1.85	1.75	1.9	1.95	2.9	4.9	3.8	5.45	2.35	1.55	1.5
9.....	1.65	1.65	1.75	1.85	1.9	3.1	5.0	3.75	5.3	2.5	1.5	1.5
10.....	1.65	1.55	.....	1.9	1.9	3.45	5.1	3.7	5.1	2.35	1.5	1.5
11.....	1.65	1.55	2.15	1.9	.....	3.5	5.0	3.75	4.9	.....	1.5	1.5
12.....	1.7	1.55	2.15	2.0	1.9	3.25	4.85	3.7	4.3	2.1	1.55	1.55
13.....	1.75	1.55	1.95	1.9	1.9	2.9	4.7	3.7	4.5	2.0	1.5	1.6
14.....	1.8	1.55	1.85	1.95	1.95	2.65	4.5	3.6	4.3	2.0	1.5	1.65
15.....	1.8	1.65	1.9	1.95	2.0	2.5	4.7	3.6	4.2	1.9	1.5	1.7
16.....	1.7	1.7	1.9	2.0	2.05	2.6	4.5	3.6	4.2	1.9	1.5	1.7
17.....	1.7	1.7	1.85	2.0	2.2	2.5	4.5	3.6	4.2	1.85	1.5	1.75
18.....	1.7	1.7	1.85	2.0	2.65	2.45	4.5	3.45	4.05	1.85	1.5	1.8
19.....	1.7	1.7	1.85	1.95	2.6	2.45	4.5	3.2	3.85	1.8	1.5	1.8
20.....	1.7	1.75	1.85	1.95	2.85	2.45	4.5	3.15	3.75	.....	1.5	1.8
21.....	1.75	1.7	1.85	1.9	2.8	2.4	4.5	3.0	3.6	1.7	1.5	1.8
22.....	1.75	1.6	2.0	1.95	2.8	2.5	4.7	3.0	3.5	1.65	1.5	1.75
23.....	1.75	1.65	1.8	1.95	2.75	2.8	4.9	3.0	3.3	1.65	1.5	1.75
24.....	1.75	1.85	1.9	2.0	2.65	3.8	4.8	3.0	3.25	1.65	1.5	1.7
25.....	1.75	1.65	1.8	2.1	2.65	4.2	4.75	3.0	3.2	1.65	1.5	1.7
26.....	1.75	1.55	1.95	.....	2.6	4.5	4.6	3.0	3.1	.....	1.5	1.7
27.....	2.0	1.65	1.85	2.2	2.7	4.8	4.5	2.9	3.0	1.65	1.5	1.7
28.....	2.0	1.6	2.0	2.1	2.65	4.9	.....	2.9	3.1	1.65	1.5	1.7
29.....	2.0	1.95	1.95	2.0	.....	.....	4.35	3.3	3.0	1.6	1.5	1.75
30.....	1.75	1.75	1.9	2.0	.....	5.1	4.1	4.45	2.9	1.6	1.5	1.75
31.....	1.75	.....	1.9	1.95	.....	5.45	.....	4.7	.....	1.6	1.5	.....
1906-7.												
1.....	1.7	.....	2.05	3.5	3.55	4.65	4.0	4.5	4.1	2.95	1.9	1.7
2.....	1.7	1.85	2.05	3.3	3.7	4.50	4.0	4.45	4.15	2.9	1.85	1.8
3.....	1.7	1.85	2.0	3.2	3.4	4.25	4.3	4.45	4.15	2.8	1.8	1.8
4.....	1.7	1.9	2.0	3.6	3.4	4.1	4.4	4.45	4.0	2.8	1.8	1.8
5.....	1.7	2.0	2.0	3.4	5.5	3.9	4.4	4.45	4.0	2.8	1.7	1.85
6.....	1.7	2.0	2.05	3.75	5.1	3.9	4.5	4.55	4.0	2.7	1.7	1.85
7.....	1.7	2.0	2.1	2.8	5.4	3.9	4.75	4.55	3.9	2.65	1.65	1.85
8.....	1.7	2.05	2.2	2.65	5.75	3.85	5.1	4.6	3.8	2.6	1.65	1.85
9.....	1.7	2.05	2.2	2.9	5.7	3.8	5.35	4.65	.....	2.5	1.65	1.85
10.....	1.7	2.05	2.25	2.8	5.4	3.9	5.6	4.7	3.6	2.55	1.65	1.85
11.....	1.7	.....	2.3	2.8	5.25	3.95	5.8	4.8	3.6	2.45	1.7	1.8
12.....	1.7	.....	2.65	5.1	.....	5.95	4.85	3.65	2.4	1.75	1.8	.....
13.....	1.75	2.05	2.3	2.7	4.9	3.85	6.1	4.75	3.65	2.4	1.75	.....
14.....	1.75	2.2	2.25	.....	4.7	3.8	6.15	4.7	3.6	2.4	1.7	1.85
15.....	.....	2.5	2.1	2.5	4.6	3.65	6.2	4.6	3.55	2.35	1.65	1.85
16.....	1.75	2.6	2.1	2.5	4.55	3.6	6.2	4.65	3.45	2.25	1.65	1.9
17.....	1.8	2.6	.....	2.45	4.5	3.5	6.05	4.65	3.4	2.2	1.6	1.9
18.....	1.8	2.5	2.15	2.5	4.45	3.6	6.0	4.7	3.3	2.15	1.65	1.9
19.....	1.8	2.35	2.25	2.5	4.4	3.6	5.85	4.85	3.3	2.1	1.65	1.9
20.....	1.75	2.3	2.7	2.5	4.55	4.1	5.6	4.8	3.25	2.1	1.65	1.9
21.....	1.8	2.1	3.1	2.4	4.85	4.85	5.5	4.85	3.25	2.1	1.65	1.9
22.....	1.8	2.0	3.1	2.5	4.9	5.0	.....	4.8	3.2	2.0	1.65	1.9
23.....	1.8	2.2	3.3	2.45	5.0	5.2	5.5	.....	3.15	2.0	1.65	1.9
24.....	1.8	2.1	3.45	2.45	5.0	5.3	5.45	4.5	3.15	2.0	1.65	1.9
25.....	1.8	2.1	3.9	2.45	5.1	5.1	5.3	4.4	3.05	2.0	1.65	1.9
26.....	1.8	2.1	4.3	2.4	5.1	4.65	5.2	4.35	2.9	1.95	1.65	1.9
27.....	.....	2.1	4.4	2.3	5.0	4.65	5.1	4.25	2.95	1.95	1.65	1.9
28.....	1.8	2.1	4.35	2.35	4.8	4.35	4.9	.....	2.95	1.9	1.65	1.9
29.....	1.8	1.95	4.0	2.7	.....	4.2	4.85	4.15	2.95	1.9	1.7	1.9
30.....	1.8	2.0	3.85	3.0	.....	4.05	4.65	4.1	2.95	1.9	1.7	1.9
31.....	1.8	.....	3.7	3.6	.....	4.0	.....	4.1	.....	1.9	1.7	.....

Daily gage height, in feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1.9	2.0	2.0	2.30	2.90	2.50	3.30	4.25	3.10	2.41	1.60	1.49
2.....	1.9	2.0	2.0	2.30	1.95	2.45	3.30	4.30	3.05	2.38	1.60	1.49
3.....		2.0	2.0	2.25	1.90	2.35	3.30	4.30	2.95	2.31	1.58	1.49
4.....	1.95	2.0	1.95	2.20	1.90	2.35	3.30	4.15	3.01	2.30	1.55	1.49
5.....	1.95	2.0	1.95	2.20	1.95	2.30	3.35	4.05	2.99	2.27	1.55	1.49
6.....	1.95	2.0	1.95	2.10	1.95	2.30	3.45	4.00	2.98	2.28	1.55	1.49
7.....	1.95	2.0	2.0	2.10	2.05	2.25	3.45	4.05	2.98	2.25	1.53	1.49
8.....	1.95	2.0	2.0	2.05	2.05	2.20	3.40	4.05	2.97	2.15	1.53	1.49
9.....	1.9	2.0	2.0	2.10	2.05	2.20	3.40	4.00	2.96	2.10	1.52	1.49
10.....	1.9	2.0	2.0	2.10	2.05	2.25	3.65	3.90	3.15	2.02	1.52	1.50
11.....	1.9	2.0	2.0	2.10	2.05	2.25	3.90	3.70	3.20	2.00	1.50	1.51
12.....	1.9	1.95	2.1	2.00	2.00	2.30	4.30	3.65	3.21	1.98	1.50	1.54
13.....	1.9	2.0	2.05	2.00	2.30	2.60	4.60	3.45	3.22	1.92	1.50	1.55
14.....	1.9	2.0	2.0	2.05	2.00	3.10	4.75	3.30	3.23	1.90	1.50	1.55
15.....	1.9	2.0	2.0	2.00	2.00	4.65	4.85	3.20	3.23	1.90	1.50	1.58
16.....	1.9	2.0	2.3	2.00	2.05	5.90	4.95	3.35	3.21	1.88	1.50	1.60
17.....	1.9	2.0	2.2	2.00	2.10	6.10	4.90	3.40	3.15	1.86	1.50	1.65
18.....	1.9	2.05	2.4	2.00	2.10	6.20	4.90	3.20	3.11	1.86	1.49	1.68
19.....	1.9	2.05	3.0	2.00	2.10	6.00	5.00	3.25	3.05	1.84	1.49	1.68
20.....	1.9	2.05	2.7	2.00	2.10	5.35	5.15	3.15	2.98	1.82	1.49	1.70
21.....	1.9	2.05	2.7	2.00	2.05	4.80	5.20	3.30	2.95	1.80	1.49	1.75
22.....	1.9	2.05	2.7	2.00	2.05	4.25	5.30	3.30	2.80	1.78	1.49	1.75
23.....	1.9	2.05	2.95	2.00	2.05	3.95	5.25	3.30	2.82	1.75	1.49	1.74
24.....	1.9	2.10	2.6	1.95	2.10	3.90	5.00	3.35	2.73	1.71	1.49	1.74
25.....	1.9	2.15	2.65	1.95	2.30	3.95	4.90	3.35	2.61	1.66	1.49	1.72
26.....	1.9	2.15	3.1	1.95	2.45	3.95	4.70	3.40	2.57	1.65	1.49	1.73
27.....	1.9	2.15	2.95	1.95	2.50	3.90	4.50	3.35	2.56	1.64	1.49	1.73
28.....	1.9	2.1	2.5	1.95	2.50	3.75	4.40	3.30	2.55	1.62	1.49	1.73
29.....	1.9	2.1	2.4	1.95	2.50	3.60	4.15	3.30	2.55	1.62	1.49	1.76
30.....	1.95	2.05	2.3	1.95		3.45	4.20	3.25	2.50	1.62	1.49	1.78
31.....	2.0		2.3	2.40		3.40		3.20		1.61	1.49	
1908-9.												
1.....	1.78	1.87	1.85	1.9	2.15	2.65	3.6	3.75	4.4	2.45	1.9	1.45
2.....	1.77	1.87	1.85	1.9	2.35	2.65	3.65	3.75	4.45	2.35	1.85	1.5
3.....	1.75	1.86	1.85	2.0	2.25	2.7	3.7	3.75	4.45	2.30	1.75	1.5
4.....	1.75	1.86	1.85	2.0	2.15	2.9	3.8	3.75	4.55	2.35	1.75	1.5
5.....	1.75	1.86	1.85	2.0	2.05	3.05	3.65	3.75	4.45	2.25	1.7	1.5
6.....	1.75	1.86	1.86	2.05	2.0	3.0	3.5	3.8	4.3	2.25	1.65	1.5
7.....	1.75	1.85	1.86	2.05	2.0	2.9	3.4	3.85	3.95	2.2	1.65	1.5
8.....	1.76	1.85	1.85	2.1	2.0	2.85	3.3	3.85	3.85	2.15	1.65	1.5
9.....	1.76	1.85	1.85	2.2	2.0	2.85	3.1	3.95	3.8	2.1	1.65	1.5
10.....	1.76	1.85	1.86	2.3	1.9	2.8	3.2	3.9	3.65	2.1	1.55	1.55
11.....	1.77	1.85	1.86	2.55	1.9	2.75	3.4	3.75	3.55	2.1	1.55	1.55
12.....	1.78	1.85	1.88	2.5	1.9	2.6	3.4	3.75	3.5	2.05	1.55	1.55
13.....	1.78	1.86	1.88	2.3	2.0	2.65	3.5	3.65	3.45	2.05	1.55	1.55
14.....	1.80	1.86	1.88	2.3	2.05	2.65	3.6	3.55	3.45	2.00	1.55	1.55
15.....	1.85	1.86	1.88	2.35	2.1	2.7	3.7	3.55	3.4	1.95	1.45	1.55
16.....	1.87	1.86	1.88	2.5	2.75	2.9	3.8	3.55	3.35	1.85	1.45	1.65
17.....	2.00	1.87	1.88	2.5	2.75	3.3	3.7	3.55	3.3	1.8	1.55	1.65
18.....	1.98	1.88	1.89	2.6	3.1	3.5	3.7	3.45	3.25	1.8	1.55	1.65
19.....	1.89	1.88	1.89	2.7	2.9	3.3	3.65	3.45	3.25	1.75	1.55	1.65
20.....	1.86	1.88	1.89	2.9	2.8	3.2	3.55	3.45	3.25	1.75	1.55	1.65
21.....	1.83	1.87	1.89	3.3	2.7	3.1	3.5	3.45	3.25	1.7	1.55	1.65
22.....	1.80	1.87	2.00	3.3	2.5	3.0	3.5	3.45	3.15	1.65	1.45	1.65
23.....	1.83	1.86	2.00	2.9	2.4	2.95	3.4	3.45	3.1	1.65	1.5	1.65
24.....	1.87	1.86	2.00	2.7	2.3	2.95	3.4	3.35	3.05	1.65	1.5	1.65
25.....	1.87	1.85	2.00	2.45	2.35	3.2	3.6	3.35	2.95	1.65	1.45	1.65
26.....	1.86	1.85	2.00	2.4	2.4	3.4	3.7	3.35	2.75	1.65	1.45	1.65
27.....	1.86	1.85	2.02	2.3	2.35	3.6	3.8	3.65	2.65	1.75	1.45	1.65
28.....	1.86	1.85	2.02	2.0	2.4	3.6	3.9	4.1	2.55	1.85	1.45	1.65
29.....	1.87	1.84	2.02	2.0		3.65	4.0	4.35	2.5	1.75	1.45	1.65
30.....	1.87	1.84	2.02	2.0		3.65	3.9	4.35	2.45	1.95	1.45	1.65
31.....	1.87		2.02	2.0		3.6		4.35		1.95	1.45	

Daily gage height, in feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.65	1.7	2.6	2.0	2.45	4.8	5.1	4.5	2.8	1.5	1.2	1.2
2.....	1.65	1.75	2.6	2.0	2.25	6.0	5.1	4.3	2.75	1.5	1.2	1.2
3.....	1.65	1.75	2.6	2.7	2.5	9.95	5.0	4.2	2.75	1.4	1.2	1.2
4.....	1.65	1.75	2.5	2.5	2.35	6.4	5.0	4.2	2.6	1.4	1.2	1.2
5.....	1.65	1.75	2.3	2.6	2.25	6.5	4.9	4.25	2.6	1.4	1.2	1.2
6.....	1.65	1.8	2.3	2.55	2.25	6.4	4.75	4.25	2.5	1.4	1.2	1.2
7.....	1.7	1.8	2.65	2.5	2.2	6.0	4.75	4.1	2.45	1.4	1.2	1.2
8.....	1.7	1.8	2.5	2.55	2.2	5.7	4.9	3.9	2.4	1.4	1.2	1.2
9.....	1.7	1.85	2.5	2.45	2.2	5.4	5.05	4.0	2.3	1.4	1.2	1.2
10.....	1.75	1.8	2.5	2.35	2.2	5.3	5.3	4.35	2.2	1.3	1.2	1.2
11.....	1.7	1.8	2.3	2.15	2.2	5.4	5.75	4.35	2.2	1.3	1.2	1.2
12.....	1.7	1.8	2.2	2.15	2.15	5.4	5.7	4.3	2.1	1.35	1.2	1.2
13.....	.....	1.75	2.3	2.15	2.15	5.5	5.75	4.25	2.05	1.35	1.2	1.2
14.....	1.6	1.75	2.45	2.05	2.15	5.7	5.65	4.2	2.0	1.35	1.15	1.2
15.....	1.6	1.75	2.3	2.1	2.25	5.9	5.55	4.1	2.0	1.35	1.15	1.25
16.....	1.6	1.75	2.2	2.1	2.25	6.0	5.35	4.1	1.95	1.3	1.15	1.25
17.....	1.6	1.7	2.2	2.1	2.2	6.2	5.25	4.0	1.95	1.25	1.15	1.3
18.....	1.6	1.75	2.15	2.1	2.15	6.25	5.25	3.9	1.9	1.3	1.2	1.3
19.....	1.6	1.75	2.15	2.15	2.15	6.4	5.25	3.8	1.85	1.3	1.2	1.3
20.....	1.65	2.05	2.15	2.15	2.15	7.85	5.25	.....	1.85	1.25	1.2	1.35
21.....	1.6	2.0	2.15	2.1	2.1	7.6	5.3	.....	1.85	1.3	1.15	1.35
22.....	1.6	2.9	2.2	2.1	2.1	8.1	5.3	.....	1.85	1.25	1.15	1.4
23.....	1.6	3.3	2.3	2.3	2.1	7.9	5.3	3.3	1.8	1.25	1.15	1.4
24.....	1.6	3.5	2.2	2.4	2.2	7.3	5.2	3.2	1.75	1.2	1.15	1.4
25.....	1.6	3.4	2.15	2.55	2.7	6.85	5.2	3.15	1.7	1.2	1.2	1.35
26.....	1.6	3.0	2.0	2.7	2.6	6.4	5.2	3.15	1.6	1.2	1.2	1.35
27.....	1.65	2.9	2.1	2.7	2.7	6.2	5.2	3.25	1.6	1.2	1.2	1.35
28.....	1.7	2.7	2.3	2.7	2.9	5.9	5.0	3.15	1.6	1.2	1.2	1.35
29.....	1.7	2.6	2.2	2.6	.....	5.6	4.9	3.1	1.5	1.2	1.2	1.35
30.....	1.7	2.6	2.05	2.6	.....	5.5	4.45	3.0	1.5	1.2	1.2	1.35
31.....	1.7	.....	2.15	2.5	.....	5.25	.....	2.9	.....	1.2	1.2	.....

NOTE.—Discharge relation affected by ice Dec. 26, 1904, to Jan. 8, 1905; Feb. 11-14, 1905; Dec. 28, 1905, to Jan. 1, 1906; part of November and December, 1906; Dec. 16-27, 1907; Jan. 31, Feb. 1 and 13, 1908; Jan. 6-15, 1909; Dec. 7 and 27-29, 1909; Jan. 3-10 and Jan. 23 to Feb. 15, 1910.

Daily discharge, in second-feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	700	230	340	1,010	2,620	4,590	2,280	405	86	53
2.....	840	260	300	1,010	2,620	4,410	2,450	354	86	53
3.....	840	230	300	840	2,800	4,230	2,450	354	86	63
4.....	700	260	340	840	2,800	4,050	2,450	354	86	63
5.....	470	260	380	840	3,340	4,050	2,280	354	86	63
6.....	470	260	380	1,210	3,700	3,870	2,110	307	74	63
7.....	470	260	380	1,320	3,700	3,870	2,280	307	74	63
8.....	470	260	340	3,520	3,700	3,700	2,110	354	74	53
9.....	380	230	300	3,340	4,050	3,520	2,110	405	74	53
10.....	340	200	260	3,340	4,950	3,520	2,110	405	74	53
11.....	380	260	230	3,340	5,840	3,520	1,960	405	74	63
12.....	420	260	260	2,980	6,380	3,520	1,800	405	74	44
13.....	420	260	260	2,620	6,920	3,520	1,660	354	63	44
14.....	420	300	340	2,280	7,280	3,520	1,510	354	63	53
15.....	420	340	380	2,110	8,350	3,520	1,510	354	63	53
16.....	470	380	840	2,110	8,350	3,520	1,380	307	53	53
17.....	420	470	840	2,110	8,350	3,340	1,380	307	53	53
18.....	380	380	770	2,110	8,350	3,340	1,380	264	53	53
19.....	340	340	640	2,280	8,350	3,340	1,380	225	53	44
20.....	185	380	340	640	2,450	7,090	3,340	1,250	190	53	44
21.....	340	380	230	640	2,620	7,280	3,340	1,140	190	48	44
22.....	580	420	340	640	2,450	6,920	3,340	923	190	44	44
23.....	770	380	380	1,010	2,110	6,560	3,340	829	190	44	53
24.....	840	340	340	1,560	1,810	5,840	3,340	743	174	44	53
25.....	920	200	300	1,320	1,680	5,310	3,340	663	158	44	63
26.....	1,010	230	380	1,320	1,440	5,130	3,340	589	143	44	86
27.....	920	120	420	1,320	1,210	4,950	3,160	589	128	44	86
28.....	770	120	380	1,010	1,320	4,770	2,980	589	113	53	128
29.....	700	120	380	920	1,560	4,770	2,620	523	128	63	128
30.....	700	60	380	.....	2,450	4,770	2,280	462	113	63	128
31.....	260	380	.....	2,800	.....	2,280	.....	99	63	.....

Daily discharge, in second-feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	99	99	113	150	260	655	848	1,080	805	280	27	21
2.....	99	99	113	150	325	622	805	1,080	848	280	27	21
3.....	99	99	113	150	205	690	935	1,140	848	240	21	21
4.....	74	99	99	150	188	725	890	1,370	848	222	21	21
5.....	74	99	99	150	188	725	890	1,700	890	205	21	21
6.....	74	99	143	150	188	690	1,080	1,770	890	205	21	21
7.....	74	113	113	150	170	690	1,080	1,770	890	188	21	21
8.....	74	113	113	150	138	622	1,190	1,930	805	138	21	21
9.....	86	99	86	154	154	622	1,190	1,920	725	108	21	21
10.....	113	99	99	170	154	530	1,190	1,920	725	95	21	21
11.....	128	99	99	205	154	530	1,030	1,840	690	82	21	27
12.....	128	128	99	205	154	530	980	1,700	690	82	21	27
13.....	128	114	113	188	154	502	890	1,560	690	71	21	27
14.....	143	99	128	188	154	560	805	1,560	690	71	21	27
15.....	143	99	128	188	154	655	725	1,430	655	71	21	27
16.....	143	128	99	188	154	725	765	1,370	622	71	21	27
17.....	158	113	99	188	188	655	765	1,310	530	60	27	27
18.....	190	99	113	188	138	560	725	1,370	475	60	27	27
19.....	158	99	128	205	138	655	725	1,370	448	51	27	34
20.....	128	113	128	240	154	655	765	1,250	420	51	27	34
21.....	113	113	128	180	205	765	980	1,140	395	60	21	42
22.....	113	113	113	260	240	805	980	1,080	348	51	21	42
23.....	113	99	113	348	280	848	1,030	980	348	42	21	42
24.....	128	113	128	348	325	805	1,030	980	370	42	21	42
25.....	128	99	128	348	420	765	1,190	980	280	42	21	42
26.....	113	113	74	395	530	805	1,250	890	348	42	21	42
27.....	113	113	99	395	655	890	1,310	805	348	34	21	71
28.....	113	113	143	395	655	890	1,190	848	348	34	21	71
29.....	99	113	143	448	.....	935	1,190	805	348	27	15	82
30.....	99	113	99	348	.....	890	1,080	805	325	27	21	82
31.....	99	.....	128	280	.....	805	.....	805	.....	27	21	.....
1905-6.												
1.....	82	82	95	150	185	428	4,550	2,300	5,100	710	56	45
2.....	71	82	95	135	150	400	4,460	2,300	5,100	455	56	45
3.....	71	82	82	150	168	375	4,100	2,300	5,200	455	45	45
4.....	71	82	95	168	108	375	3,740	2,220	5,100	455	56	45
5.....	71	82	108	135	150	375	3,380	1,960	5,010	400	56	45
6.....	82	95	108	150	168	350	3,200	1,880	4,640	400	56	45
7.....	71	123	108	150	185	375	3,290	1,880	4,640	375	56	45
8.....	71	123	95	150	168	640	3,560	1,630	4,550	328	56	45
9.....	71	71	95	135	150	790	3,740	1,560	4,280	400	45	45
10.....	71	51	154	150	150	1,150	3,920	1,480	3,920	328	45	45
11.....	71	51	222	150	150	1,210	3,740	1,560	3,560	274	45	45
12.....	82	51	222	185	150	930	3,470	1,480	2,480	220	56	56
13.....	95	51	154	150	150	640	3,200	1,480	2,840	185	45	67
14.....	108	51	123	168	188	485	2,840	1,340	2,480	185	45	80
15.....	108	71	138	168	185	400	3,200	1,340	2,300	150	45	92
16.....	82	82	138	185	202	455	2,840	1,340	2,300	150	45	92
17.....	82	82	123	185	260	400	2,840	1,340	2,300	135	45	106
18.....	82	82	123	185	485	375	2,840	1,150	2,040	135	45	120
19.....	82	82	123	168	455	375	2,840	880	1,710	120	45	120
20.....	82	95	123	168	608	375	2,840	835	1,560	106	45	120
21.....	95	82	123	150	575	350	2,840	710	1,340	92	45	120
22.....	95	60	170	168	575	400	3,200	710	1,210	80	45	106
23.....	95	71	108	168	545	575	3,560	710	980	80	45	106
24.....	95	60	138	185	515	1,630	3,380	710	930	80	45	92
25.....	95	60	108	220	485	2,300	3,290	710	880	80	45	92
26.....	95	51	154	240	455	2,840	3,020	710	790	80	45	92
27.....	170	71	123	260	515	3,380	2,840	640	710	80	45	92
28.....	170	60	123	220	485	3,560	2,700	640	799	80	45	92
29.....	170	71	123	185	.....	3,740	2,570	980	710	67	45	106
30.....	95	82	123	185	.....	3,920	2,130	2,750	640	67	45	106
31.....	95	.....	123	168	.....	4,550	.....	3,200	.....	67	45	.....

Daily discharge, in second-feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.	92	128	202	1,210	1,280	3,110	1,960	2,840	2,130	675	150	92
2.	92	135	202	980	1,480	2,840	1,960	2,750	2,220	640	135	120
3.	92	135	185	880	1,090	2,390	2,480	2,750	2,220	575	120	120
4.	92	150	185	1,340	1,090	2,130	2,660	2,750	1,960	575	120	120
5.	92	185	185	1,090	4,640	1,790	2,660	2,750	1,960	575	92	135
6.	92	185	202	1,560	3,920	1,790	2,840	2,930	1,960	515	92	135
7.	92	185	220	575	4,460	1,790	3,290	2,930	1,790	485	80	135
8.	92	202	260	485	5,100	1,710	3,920	3,020	1,630	455	80	135
9.	92	202	260	640	5,010	1,630	4,370	3,110	1,480	400	80	135
10.	92	202	282	575	4,460	1,790	4,820	3,200	1,340	428	80	135
11.	92	202	305	575	4,190	1,880	5,200	3,380	1,340	375	92	120
12.	92	202	305	485	3,920	1,800	5,500	3,470	1,410	350	106	120
13.	106	202	305	515	3,560	1,710	5,800	3,290	1,410	350	106	128
14.	106	260	282	458	3,200	1,630	5,900	3,200	1,340	350	92	135
15.	106	400	220	400	3,020	1,410	6,000	3,020	1,280	328	80	135
16.	106	455	220	400	2,930	1,340	6,000	3,110	1,150	282	80	150
17.	120	455	230	375	2,840	1,210	5,700	3,110	1,090	260	67	150
18.	120	400	240	400	2,750	1,340	5,600	3,200	980	240	80	150
19.	120	328	282	400	2,660	1,340	5,300	3,470	980	220	80	150
20.	106	305	515	400	2,930	2,130	4,820	3,380	930	220	80	150
21.	120	220	790	350	3,470	3,470	4,640	3,470	930	220	80	150
22.	120	185	790	400	3,560	3,740	4,640	3,380	880	185	80	150
23.	120	260	980	375	3,740	4,100	4,640	3,110	835	185	80	150
24.	120	220	1,150	375	3,740	4,280	4,550	2,840	835	185	80	150
25.	120	220	1,790	375	3,920	3,920	4,280	2,660	750	185	80	150
26.	120	220	2,480	350	3,920	3,110	4,100	2,570	640	168	80	150
27.	120	220	2,660	305	3,740	3,110	3,920	2,390	675	168	80	150
28.	120	220	2,570	328	3,380	2,570	3,560	2,300	675	150	80	150
29.	120	168	1,960	515	-----	2,300	3,470	2,220	675	150	92	150
30.	120	185	1,710	710	-----	2,040	3,110	2,130	675	150	92	150
31.	120	-----	1,480	1,340	-----	1,960	-----	2,130	-----	150	92	-----
1907-8.												
1.	150	185	185	305	168	400	980	2,390	790	355	67	43
2.	150	185	185	305	168	375	980	2,480	750	341	67	43
3.	159	185	185	282	150	328	980	2,480	675	310	62	43
4.	168	185	168	260	150	328	980	2,220	718	305	56	43
5.	168	185	168	260	168	305	1,040	2,040	703	292	56	43
6.	168	185	168	220	168	305	1,150	1,960	696	296	56	43
7.	168	185	185	220	202	282	1,150	2,040	696	282	52	43
8.	168	185	185	202	202	260	1,090	2,040	689	240	52	43
9.	150	185	185	220	202	260	1,090	1,960	682	220	49	43
10.	150	185	185	220	202	282	1,410	1,790	835	192	49	45
11.	150	185	185	220	202	282	1,790	1,480	880	185	45	47
12.	150	168	220	185	185	305	2,480	1,410	890	178	45	54
13.	150	185	202	185	185	455	3,020	1,150	900	157	45	56
14.	150	185	185	202	185	790	3,290	980	910	150	45	56
15.	150	185	185	185	185	3,110	3,470	880	910	150	45	63
16.	150	185	185	185	202	5,400	3,650	1,040	890	144	45	67
17.	150	185	185	185	220	5,800	3,560	1,090	835	138	45	80
18.	150	202	185	185	220	6,000	3,560	880	799	138	43	87
19.	150	202	185	185	220	5,600	3,740	930	750	132	43	87
20.	150	202	185	185	220	4,370	4,010	835	696	126	43	92
21.	150	202	305	185	202	3,380	4,100	980	675	120	43	106
22.	150	202	305	185	202	2,390	4,280	980	575	114	43	106
23.	150	202	305	185	202	1,880	4,190	980	588	106	43	103
24.	150	220	305	168	220	1,790	3,740	1,040	533	95	43	103
25.	150	240	305	168	305	1,880	3,560	1,040	461	82	43	98
26.	150	240	400	168	375	1,880	3,200	1,090	438	80	43	100
27.	150	240	400	168	400	1,790	2,840	1,040	433	77	43	100
28.	150	220	400	168	400	1,560	2,660	980	428	72	43	100
29.	150	220	350	168	400	1,340	2,220	980	428	72	43	109
30.	168	202	305	168	-----	1,150	2,300	930	400	72	43	114
31.	185	-----	305	168	-----	1,090	-----	880	-----	70	43	-----

Daily discharge, in second-feet, of Grande Ronde River at Elgin, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	114	141	135	150	240	485	1,340	1,560	2,660	375	150	36
2.....	112	141	135	150	328	485	1,410	1,560	2,750	328	135	45
3.....	106	138	135	185	282	515	1,480	1,560	2,750	305	106	45
4.....	106	138	135	185	240	640	1,630	1,560	2,930	328	106	45
5.....	106	138	135	185	202	750	1,410	1,560	2,750	282	92	45
6.....	106	138	138	202	185	710	1,210	1,630	2,480	282	80	45
7.....	106	135	138	202	185	640	1,090	1,710	1,880	260	80	45
8.....	109	135	135	220	185	608	980	1,710	1,710	240	80	45
9.....	109	135	135	237	185	608	790	1,880	1,630	220	80	45
10.....	109	135	138	254	150	575	880	1,790	1,410	220	56	56
11.....	112	135	138	271	150	545	1,090	1,560	1,280	220	56	56
12.....	114	135	144	288	150	455	1,090	1,560	1,210	202	56	56
13.....	114	138	144	305	185	485	1,210	1,410	1,150	202	56	56
14.....	120	138	144	305	202	485	1,340	1,280	1,150	185	56	56
15.....	135	138	144	328	220	515	1,480	1,280	1,090	168	36	56
16.....	141	138	144	400	545	640	1,630	1,280	1,040	135	36	80
17.....	185	141	144	400	545	980	1,480	1,280	980	120	56	80
18.....	178	144	147	455	790	1,210	1,480	1,150	930	120	56	80
19.....	147	144	147	515	640	980	1,410	1,150	930	106	56	80
20.....	138	144	147	640	575	880	1,280	1,150	930	106	56	80
21.....	129	141	147	980	515	790	1,210	1,150	930	92	56	80
22.....	120	141	185	980	400	710	1,210	1,150	835	80	36	80
23.....	129	138	185	640	350	675	1,090	1,150	790	80	45	80
24.....	141	138	185	515	305	675	1,090	1,040	750	80	45	80
25.....	141	135	185	375	328	880	1,340	1,040	675	80	36	80
26.....	138	135	185	350	350	1,090	1,480	1,040	545	80	36	80
27.....	138	135	192	305	328	1,340	1,630	1,410	485	106	36	80
28.....	138	135	192	185	350	1,340	1,790	2,130	428	135	36	80
29.....	141	132	192	185	.....	1,410	1,690	2,570	400	106	36	80
30.....	141	132	192	185	.....	1,410	1,790	2,570	375	168	36	80
31.....	141	.....	192	185	.....	1,340	.....	2,570	.....	168	36	.....
1909-10.												
1.....	80	92	455	185	240	3,280	3,820	2,750	575	52	23	23
2.....	80	106	455	185	240	5,440	3,820	2,410	545	52	23	23
3.....	80	106	455	192	240	5,350	3,640	2,250	545	39	23	23
4.....	80	106	400	199	250	6,160	3,640	2,250	455	39	23	23
5.....	80	106	305	206	250	6,340	3,460	2,330	455	39	23	23
6.....	80	120	305	212	250	6,160	3,190	2,330	400	39	23	23
7.....	92	120	352	219	260	5,440	3,190	2,090	375	39	23	23
8.....	92	120	400	225	260	4,900	3,460	1,780	350	39	23	23
9.....	92	135	400	232	260	4,360	3,730	1,930	305	39	23	23
10.....	106	120	400	240	260	4,180	4,180	2,500	260	30	23	23
11.....	92	120	305	240	250	4,270	4,990	2,500	260	30	23	23
12.....	92	120	260	240	250	4,360	4,900	2,410	220	34	23	23
13.....	80	106	305	240	250	4,540	4,990	2,330	202	34	23	23
14.....	67	106	375	202	240	4,900	4,810	2,250	185	34	20	23
15.....	67	106	305	220	240	5,260	4,630	2,090	185	34	20	26
16.....	67	106	260	220	282	5,440	4,270	2,170	167	30	20	26
17.....	67	92	260	220	260	5,800	4,090	1,930	167	26	20	30
18.....	67	106	240	220	240	5,890	4,090	1,780	150	30	23	30
19.....	67	106	240	240	240	6,100	4,090	1,630	135	30	23	30
20.....	80	202	240	240	240	8,770	4,090	1,480	135	26	23	34
21.....	67	185	240	220	220	8,320	4,180	1,210	135	30	20	34
22.....	67	640	260	220	220	9,220	4,180	1,090	135	26	20	39
23.....	67	980	305	220	220	8,860	4,180	980	120	26	20	39
24.....	67	1,210	260	220	260	7,780	4,000	880	106	23	20	39
25.....	67	1,090	240	220	515	6,970	4,000	835	92	23	23	34
26.....	67	710	185	230	455	6,160	4,000	835	68	23	23	34
27.....	80	640	189	230	515	5,800	4,000	930	68	23	23	34
28.....	92	515	194	230	640	5,260	3,640	835	68	23	23	34
29.....	92	455	198	230	.....	4,720	3,460	790	52	23	23	34
30.....	92	455	202	240	.....	4,540	2,660	710	52	23	23	34
31.....	92	.....	240	240	.....	4,090	.....	640	.....	23	23	.....

NOTE.—Daily discharge determined as follows:
1903 and 1904. Nov. 20, 1903, to Mar. 31, 1904, from fairly well defined rating curve; Apr. 1 to Dec. 31, 1904, from curve fairly well defined below 4,000 second-feet; Dec. 26-31, 1904, estimated because of ice.
1905. From fairly well defined rating curve. Estimated because of ice as follows: Jan. 1-8, 150 second-feet; Feb. 11-14, Nov. 24, 25, 29, 30, Dec. 28-31.
1906 to 1909. From curve fairly well defined below 4,000 second-feet. Estimated or interpolated because of ice as follows: Dec. 16-27, 1907; Feb. 13, 1908; Jan. 9-12, Dec. 7, 27-29, 1909.
1910. From curve fairly well defined between 20 and 4,000 second-feet. Jan. 3-10 and Jan. 23 to Feb. 15, estimated because of ice.

Monthly discharge of Grande Ronde River at Elgin, Oreg., for 1903-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
November 20-30.....	1,010	185	703	15,300	B.
December.....	840	60	401	24,700	B.
January.....	470	200	313	19,200	C.
February.....	1,560	230	630	36,200	B.
March.....	3,520	840	2,040	125,000	B.
April.....	8,350	2,620	5,520	329,000	C.
May.....	4,590	2,280	3,470	213,000	B.
June.....	2,450	462	1,500	89,000	B.
July.....	405	99	271	16,700	B.
August.....	86	44	63.1	3,880	B.
September.....	128	44	63.2	3,760	B.
The period.....				876,000	
1904-5.					
October.....	190	74	114	7,010	B.
November.....	128	99	107	6,370	B.
December.....	143	74	114	7,010	C.
January.....	448	150	231	14,400	C.
February.....	655	138	244	13,600	C.
March.....	935	502	703	43,200	B.
April.....	1,310	725	983	58,500	B.
May.....	1,930	805	1,310	80,400	B.
June.....	890	280	588	35,000	B.
July.....	280	27	98.7	6,070	B.
August.....	27	15	22	1,350	B.
September.....	82	21	35	2,090	B.
The year.....	1,930	15	379	275,000	
1905-6.					
October.....	170	71	92.8	5,710	B.
November.....	123	51	74.6	4,440	B.
December.....	222	82	127	7,810	C.
January.....	260	135	172	10,600	C.
February.....	608	150	307	17,000	C.
March.....	4,550	350	1,230	75,600	B.
April.....	4,550	2,130	3,270	195,000	B.
May.....	3,200	640	1,440	88,500	B.
June.....	5,200	640	2,670	159,000	B.
July.....	710	67	220	13,500	B.
August.....	56	45	47.8	2,940	C.
September.....	120	45	78.4	4,670	B.
The year.....	5,200	45	811	585,000	
1906-7.					
October.....	120	92	107	6,580	B.
November.....	455	128	235	14,000	B.
December.....	2,660	185	756	46,500	B.
January.....	1,560	305	618	38,000	C.
February.....	5,100	1,090	3,360	187,000	B.
March.....	4,280	1,210	2,300	141,000	B.
April.....	6,000	1,960	4,260	253,000	B.
May.....	3,470	2,130	2,930	180,000	B.
June.....	2,220	640	1,270	75,600	B.
July.....	675	150	329	20,200	C.
August.....	150	67	90.6	5,570	C.
September.....	150	92	138	8,210	C.
The year.....	6,000	67	1,370	976,000	
1907-8.					
October.....	185	150	155	9,530	C.
November.....	240	168	197	11,700	C.
December.....	400	168	238	14,600	C.
January.....	305	168	203	12,500	C.
February.....	400	150	224	12,900	C.
March.....	6,000	260	1,790	110,000	C.
April.....	4,280	980	2,550	152,000	B.
May.....	2,480	835	1,390	85,500	B.
June.....	910	400	688	40,900	B.
July.....	355	70	171	10,500	C.
August.....	67	43	47.8	2,940	C.
September.....	114	43	72.0	4,280	C.
The year.....	6,000	43	644	467,000	

Monthly discharge of Grande Ronde River at Elgin, Oreg., for 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	185	106	128	7,870	C.
November.....	144	132	138	8,210	C.
December.....	192	135	156	9,590	C.
January.....	980	150	347	21,300	C.
February.....	790	150	325	18,000	B.
March.....	1,410	455	802	49,300	B.
April.....	1,960	790	1,340	79,700	B.
May.....	2,570	1,040	1,530	94,100	B.
June.....	2,930	375	1,330	79,100	B.
July.....	375	80	180	11,100	B.
August.....	150	36	61.9	3,810	B.
September.....	80	36	64.4	3,830	B.
The year.....	2,930	36	534	386,000	
1909-10.					
October.....	106	67	79.3	4,880	B.
November.....	1,210	92	306	18,200	B.
December.....	455	185	298	18,300	C.
January.....	240	185	222	13,600	C.
February.....	640	220	287	15,900	C.
March.....	9,220	3,280	5,770	355,000	B.
April.....	4,990	2,660	3,980	237,000	B.
May.....	2,750	640	1,710	105,000	B.
June.....	575	52	232	13,800	B.
July.....	52	23	31.6	1,940	B.
August.....	23	20	22.2	1,360	B.
September.....	39	23	28.4	1,690	B.
The year.....	9,220	20	1,080	787,000	

CATHERINE CREEK NEAR UNION, OREG.

Location.—In sec. 3, T. 5 S., R. 40 E., at highway bridge just below Robbins's sawmill, 6 miles above Union.

Records presented.—May 15, 1906, to May 18, 1907.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Rock and coarse gravel; fairly permanent.

Discharge measurements.—Made from bridge.

Winter flow.—Stream frozen for considerable period each winter.

Artificial control.—Flow during summer months somewhat irregular on account of nonuniform use of water at mill above.

Estimates withheld on account of lack of low-water measurements.

Discharge measurements of Catherine Creek near Union, Oreg., in 1906-7.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Apr. 29	R. S. Hall.....	3.20	335	Apr. 30	I. E. Oakes.....	3.20	302
May 15	.....do.....	3.30	378				
June 24	.....do.....	3.10	276				
Dec. 1 ^a	Stevens and McGlashan	2.80	54				

^a Channel obstructed by anchor ice.

Daily gage height, in feet, of Catherine Creek near Union, Oreg., for 1906-7.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1906.						1906.					
1.....		3.5	2.9	2.1	2.1	16.....	3.2	3.3	2.4	2.1	2.1
2.....		3.7	2.8	2.1	2.1	17.....	3.1	3.3	2.4	2.1	2.1
3.....		3.8	2.8	2.1	2.1	18.....	3.0	3.3	2.4	2.1	2.1
4.....		4.0	2.8	2.1	2.0	19.....	3.0	3.2	2.4	2.1	2.0
5.....		3.9	2.8	2.1	2.0	20.....	3.0	3.1	2.3	2.1	2.0
6.....		3.8	2.7	2.1	2.0	21.....	3.0	3.1	2.3	2.1	2.0
7.....		3.7	2.7	2.1	2.0	22.....	3.0	3.1	2.3	2.1	2.0
8.....		3.5	2.7	2.1	2.0	23.....	3.0	3.0	2.3	2.1	2.0
9.....		3.5	2.6	2.1	2.0	24.....	3.0	3.0	2.3	2.1	2.0
10.....		3.5	2.6	2.1	2.0	25.....	3.0	3.0	2.3	2.1	2.0
11.....		3.6	2.6	2.1	2.0	26.....	3.1	3.0	2.3	2.1	2.0
12.....		3.6	2.5	2.1	2.0	27.....	3.1	3.1	2.2	2.1	2.0
13.....		3.5	2.5	2.1	2.1	28.....	3.0	2.9	2.2	2.1	2.0
14.....		3.4	2.5	2.1	2.1	29.....	3.2	2.9	2.2	2.1	2.0
15.....	3.3	3.3	3.4	2.1	2.1	30.....	3.3	2.8	2.2	2.1	2.0
						31.....	3.4		2.2	2.1	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	2.0	2.0	2.5	2.6	2.3	3.0	2.7	3.3				
2.....	2.0	2.0	2.6	2.5	2.2	3.2	2.6	3.5				
3.....	2.1	2.1	2.6	2.5	2.1	3.1	2.7	3.7				
4.....	2.1	2.1	2.8	2.4	2.2	2.9	2.9	3.9				
5.....	2.1	2.2	2.5	2.4	3.2	3.2	3.0	3.7				
6.....	2.0	2.1	2.3	2.4	2.7	2.9	3.1	3.9				
7.....	2.0	2.2	2.3		2.7	2.8	3.15	3.9				
8.....	2.0	2.2	2.2		2.8	2.9	3.2	3.7				
9.....	2.0	2.2	2.2	3.9	2.9	2.8	3.25	3.9				
10.....	2.0	2.2	2.2		2.7	2.7	3.3	4.0				
11.....	2.0	2.2	2.3		2.7	2.7	3.3	4.5				
12.....	2.1	2.2	2.3		2.7	2.9	3.45	4.3				
13.....	2.0	3.1	2.2		2.7	3.2	3.5	4.4				
14.....	2.0	3.6	2.2		2.8	3.3	3.8	4.1				
15.....	2.0	3.0	2.2		2.8	3.3	4.1	4.4				
16.....	2.0	2.7	2.2	3.9	2.7	3.1	3.9	4.5				
17.....	2.0	2.6	2.2	3.7	2.9	2.9	3.7	4.6				
18.....	2.0	2.5	2.2	2.5	2.7	2.7	3.9	4.5				
19.....	2.0	2.7	2.2	2.3	2.9	2.8	4.0					
20.....	2.0	2.5	2.3	2.5	2.9	3.2	3.8					
21.....	2.0	2.5	2.3	2.9	3.1	3.5	3.5					
22.....	2.0	2.4	2.4	2.7	3.0	3.7	3.2					
23.....	2.0	2.3	2.5	2.9	3.1	3.7	3.3					
24.....	2.0	2.2	2.6	2.8	3.1	3.3	3.1					
25.....	2.0	2.3	2.7	2.7	2.9	3.2	3.1					
26.....	2.1	2.5	3.0	2.9	3.2	3.1	3.3					
27.....	2.1	2.5	3.0	2.7	3.1	3.0	3.2					
28.....	2.0	2.4	2.8	3.2	3.0	2.9	3.1					
29.....	2.1	2.4	2.7	2.9		2.7	3.1					
30.....	2.0	2.4	2.7	2.3		2.7	2.9					
31.....	2.0		2.6	2.7		2.8						

NOTE.—Ice present Dec. 10, 1906, to Jan. 20, 1907.

WALLOWA LAKE NEAR JOSEPH, OREG.

Location.—In sec. 5, T. 3 S., R. 45 E., near outlet of Wallowa Lake, about $1\frac{1}{4}$ miles above Joseph.

Records presented.—April 1 to June 3, 1905; July 15, 1905, to July 28, 1906.

Gage.—Vertical staff on crib of dam, its datum level with floor of sluiceway. Readings up to June, 1905, made on old gage of Wallowa River station, which was on the lake near its outlet. Readings on this gage from 1903 to March 30, 1905, give the fluctuation of lake level and also indicate discharge of river. Work on dam at outlet of lake began about March 30, 1905. Relation between the two gages not determined.

Daily gage height, in feet, of Wallowa Lake near Joseph, Oreg., for 1905-6.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1905.							1905.						
1.	1.50	2.70	4.90	.....	.....	.....	16.	1.80	3.80	.....	.....	1.0	0.75
2.	1.50	2.80	4.90	.....	2.1	0.85	17.	1.90	3.90	.....	.....	.....	.....
3.	.....	2.90	4.90	.....	.....	.....	18.	1.90	3.95	.....	.....	.....	.....
4.	1.60	2.90	.....	.....	.....	.....	19.	1.90	4.00	.....	4.2	1.0	.65
5.	1.60	.....	.....	.....	1.6	.....	20.	1.90	4.10	.....	.....	.....	.....
6.	1.60	3.00	.....	.....	.....	.8	21.	2.00	4.30	.....	.....	.....	.....
7.	1.60	.....	.....	.....	.....	.....	22.	2.00	4.40	.....	3.7	.....	.....
8.	1.60	.....	.....	.....	.....	.....	23.	2.10	4.40	.....	.....	.9	.7
9.	1.60	3.20	.....	.....	.....	.75	24.	2.10	4.50	.....	.....	.....	.....
10.	1.70	3.30	.....	.....	1.3	.....	25.	2.20	4.60	.....	.....	.....	.....
11.	.....	3.50	.....	.....	.....	.....	26.	2.20	4.60	.....	3.6	.....	.....
12.	1.70	3.60	.....	.....	1.1	.....	27.	.....	4.70	.....	.....	.....	.75
13.	1.70	3.60	.....	.....	.....	.8	28.	2.30	4.70	.....	.....	.....	.....
14.	.....	3.70	.....	.....	.....	.....	29.	2.40	4.80	.....	3.1	.....	.....
15.	1.80	3.70	.....	4.5	.....	.....	30.	2.60	4.80	.....	.....	.9	.85
.....	.....	.....	.....	.....	.....	.....	31.	.....	4.90	.....	.....	.....	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	.....	0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2.	.....	.....	0.6	.....	.....	.....	.....	1.4	3.3	.....	.....	.....
3.	.....	.....	.....	0.6	0.6	0.65	.....	.....	.....	.....	.....	.....
4.	0.8	.65	.....	.....	.....	.....	0.65	.....	.....	.....	.....	.....
5.	.....	.....	.....	.....	.....	.....	.....	1.4	.....	6.7	.....	.....
6.	.....	.65	.6	.65	.....	.....	.....	.....	3.4	.....	.....	.....
7.	.8	.....	.....	.....	.6	.65	.7	.....	.....	6.3	.....	.....
8.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9.	.....	.....	.6	.....	.....	.....	.....	1.9	2.05	.....	.....	.....
10.	.....	.....	.....	.6	.6	.7	.....	.....	.....	.....	.....	.....
11.	.....	.6	.....	.....	.....	.....	.8	.....	.....	6.6	.....	.....
12.	.....	.....	.....	.....	.....	.....	.....	2.8	.....	.....	.....	.....
13.	.....	.....	.6	.6	.....	.....	.....	.....	3.75	.....	.....	.....
14.	.....	.....	.6	.6	.6	.65	.8	.....	.....	6.7	.....	.....
15.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16.	.....	.....	.6	.....	.....	.....	.....	3.6	4.5	.....	.....	.....
17.	.....	.....	.....	.6	.6	.6	.....	.....	5.4	6.3	.....	.....
18.	.7	.6	.....	.....	.....	.....	.8	3.7	.....	.....	.....	.....
19.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21.	.7	.....	.....	.6	.....	.65	.9	.....	.....	6.2	.....	.....
22.	.....	.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23.	.....	.....	.6	.....	.....	.....	.....	.....	5.7	.....	.....	.....
24.	.....	.....	.....	.6	.....	.65	.....	3.7	.....	.....	.....	.....
25.	.7	.6	.....	.....	.65	.....	1.2	.....	.....	5.8	.....	.....
26.	.....	.....	.....	.....	.....	.....	.....	3.8	.....	.....	.....	.....
27.	.....	.....	.6	.65	.7	.6	.....	.....	6.2	.....	.....	.....
28.	.65	.....	.....	.....	.....	.....	1.3	.....	.....	5.05	.....	.....
29.	.....	.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30.	.....	.....	.....	.....	.....	.....	.....	3.6	6.2	.....	.....	.....
31.	.....	.....	.....	.6	.....	.7	.....	.....	.....	.....	.....	.....

NOTE.—Gage heights beginning July 15, 1905, refer to the gage on the dam.

WALLOWA RIVER AT JOSEPH, OREG.

Location.—In sec. 5, T. 3 S., R. 45 E., about 300 feet below controlling dam at outlet of Wallowa Lake and 50 feet above footbridge; about half a mile above Joseph and above the headgates of four irrigation ditches, the first taking out 125 feet below gage.

Records presented.—November 12, 1903, to August 23, 1907, and June 14, 1908, to September 30, 1910.

Drainage area.—52 square miles.

Gage.—Vertical staff bolted to large boulder. A gage on lake used up to March 30, 1905.

Channel.—Bowlders; practically permanent.

Discharge measurements.—Made from footbridge or, at low stages, by wading.

Winter flow.—Unaffected by ice; channel kept open on account of proximity to outlet of lake.

Artificial control.—About 10,000 acre-feet of storage has been developed in Wallowa Lake and used, beginning in 1905.

Accuracy.—Results good, though somewhat uncertain for high stages.

Discharge measurements of Wallowa River at Joseph, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 12	J. H. Lewis.....	1.48	79	May 23	R. S. Hall.....	2.65	247
				June 27	do.....	2.80	336
1904.				Dec. 7	Stevens and McGlashan	2.20	128
July 18	W. C. Sawyer.....	2.98	402	1907.			
18	do.....	2.97	413	Feb. 7	W. P. Hardesty.....	2.12	84
Aug. 18	do.....	2.38	234	1908.			
Sept. 26	do.....	1.53	84	June 2	H. D. McGlashan.....	2.68	239
26	do.....	1.54	95	Oct. 19	L. R. Allen.....	2.26	114
1905.				1909.			
Mar. 30	W. C. Sawyer.....	1.51	82	Oct. 17	F. F. Henshaw.....	2.13	88.6
May 18	do.....	2.20	102	1910.			
July 10	do.....	2.43	202	Sept. 13	F. C. Ebert.....	2.02	63.9
11	do.....	2.30	131	13	R. H. Bolster.....	2.01	62.6
11	do.....	2.58	239				
11	do.....	2.17	83				
12	do.....	2.74	319				
Sept. 19	do.....	2.05	59				
Nov. 27	R. S. Hall.....	2.02	76				

Daily gage height, in feet, of Wallowa River at Joseph, Oreg., for 1903-1907; 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....			1.55	1.45	1.10		1.40	2.00	3.20	3.80	2.70	
2.....			1.60	1.45	1.20		1.45	2.00	3.20	3.80	2.70	
3.....			1.60				1.35	2.00	3.20	3.95	2.60	
4.....			1.55		1.25		1.33	2.00	3.20	3.95	2.60	
5.....			1.53		1.25		1.30	2.00	3.20	3.90		
6.....			1.55				1.30	2.00	3.25	3.90		
7.....			1.55		1.20		1.30	2.00	3.25	3.90		
8.....			1.55		1.20	1.45	1.30	2.00	3.25	3.85		
9.....			1.55		1.20	1.45	1.30	2.00	3.30	3.80		
10.....			1.53	1.42			1.33	2.00	3.30	3.80		
11.....			1.53	1.42			1.37	2.07	3.30	3.75		
12.....			1.55	1.40	1.25		1.40	2.10	3.25	3.70		
13.....		1.55	1.50	1.40	1.25		1.45	2.15	3.25	3.65		
14.....		1.60	1.50	1.40	1.25	1.50	1.52	2.20	3.25	3.50		
15.....		1.60	1.45	1.40	1.25	1.40	1.70	2.25	3.30	3.45		
16.....		1.55	1.55	1.40	1.35	1.40	1.80	2.30	3.40			
17.....		1.50	1.53		1.35	1.40	1.85	2.38	3.50	3.10	2.38	
18.....		1.50	1.55		1.40	1.40	1.90	2.50	3.60	3.00	2.40	
19.....		1.55	1.55		1.45	1.45	1.95	2.58	3.70	2.90		
20.....		1.55	1.50		1.45	1.45	2.00	2.60	3.80	2.80		
21.....		1.60	1.50		1.40		2.00	2.65	3.80	2.85		
22.....		1.60	1.45		1.40		2.00	2.75	3.80	2.80		
23.....		1.60	1.45		1.40	1.45	2.00	2.90	3.70	2.95		
24.....		1.65	1.43	1.40	1.40	1.45	2.00	3.05	3.60	3.00		
25.....		1.65		1.35	1.40	1.40	1.95	3.10	3.55	3.10		1.54
26.....		1.60		1.35	1.35	1.40	1.95	3.10	3.50	3.50		1.53
27.....		1.63	1.45	1.30		1.45		3.05	3.50	3.00		
28.....		1.55	1.45	1.25		1.40	1.95		3.55	3.00		1.50
29.....		1.55	1.45	1.25		1.50	1.95	3.05	3.65	2.95		1.60
30.....		1.55	1.45	1.25		1.50	1.95	3.05	3.70	2.90		1.50
31.....			1.45	1.25		1.45		3.15		2.80		

Daily gage height, in feet, of Wallowa River at Joseph, Oreg., for 1903-1907; 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1	1.5	-----	1.3	1.4	1.2	1.2	0.5	0.9	2.3	1.8	2.8	2.15
2	1.5	1.4	1.3	1.4	1.2	1.2	.5	.9	2.5	1.7	2.8	-----
3	1.5	1.4	1.3	1.4	1.2	1.2	.55	.9	2.6	1.7	2.7	2.1
4	1.5	1.4	1.3	1.4	1.2	1.2	.6	.9	2.6	1.7	2.7	2.1
5	1.5	1.4	1.3	1.3	1.2	1.2	.6	-----	2.7	1.7	2.6	2.1
6	1.5	1.4	1.3	1.3	1.2	1.2	.6	.9	2.8	1.8	2.55	2.1
7	1.5	-----	1.3	1.3	1.2	1.2	.6	.9	2.7	1.9	2.5	2.1
8	1.5	1.3	1.3	1.3	1.2	1.2	.6	.9	2.6	1.9	2.5	2.1
9	1.6	1.3	1.3	1.3	1.1	1.2	.6	.9	2.5	1.7	2.5	2.1
10	-----	1.3	1.3	-----	1.1	1.2	.65	.7	2.4	1.7	2.4	2.1
11	1.4	1.3	1.3	1.3	1.2	1.2	.7	.7	2.5	1.7	2.4	2.1
12	1.6	1.3	1.3	1.3	1.2	1.2	.5	.7	2.4	2.5	2.4	2.1
13	1.6	1.3	-----	1.3	1.2	-----	.5	.7	2.5	2.8	2.4	2.1
14	1.6	-----	1.3	1.3	1.2	-----	.7	.7	2.5	2.8	2.4	2.1
15	1.6	1.3	1.3	1.3	1.2	1.2	.6	.6	2.4	2.7	2.35	2.1
16	1.6	1.3	1.3	1.3	1.2	1.3	.6	.5	2.4	2.7	2.3	2.05
17	1.6	-----	1.3	1.3	1.2	1.3	.7	.5	2.4	2.6	2.3	2.0
18	1.6	1.3	1.3	1.3	1.2	1.3	.7	.55	2.4	2.6	2.3	2.05
19	1.5	1.3	1.3	1.3	1.2	1.3	.7	1.0	2.3	2.6	2.3	2.0
20	1.5	-----	1.2	1.2	-----	1.4	.7	.9	2.1	2.7	2.25	2.0
21	1.5	-----	1.3	1.2	1.3	-----	.75	.8	2.2	2.8	2.25	2.0
22	1.5	1.3	1.3	1.3	1.2	-----	.75	.8	2.2	2.8	2.3	2.0
23	1.5	1.3	-----	1.3	1.2	-----	.75	.85	2.2	2.8	2.25	2.0
24	1.5	1.3	1.3	-----	1.2	1.4	.75	1.1	2.1	2.7	2.25	-----
25	1.5	1.3	1.3	-----	1.2	-----	.8	1.2	2.0	2.8	2.25	2.0
26	1.4	1.3	1.3	1.3	1.2	1.4	.8	1.0	2.0	2.6	2.25	2.0
27	1.4	1.3	1.2	1.3	1.2	1.4	.8	1.0	1.9	2.7	2.2	2.0
28	1.4	-----	1.2	1.3	1.2	-----	.8	.8	1.7	2.7	2.2	2.05
29	1.4	1.3	-----	1.3	-----	1.5	.85	.9	1.7	2.7	2.2	2.2
30	-----	-----	1.4	-----	-----	1.6	.85	.9	1.7	-----	2.2	2.2
31	1.4	-----	1.4	1.3	-----	.6	-----	2.2	-----	2.8	2.2	-----
1905-6.												
1	2.1	2.0	1.9	1.9	1.9	2.1	2.0	2.4	2.6	2.8	2.9	2.05
2	2.1	2.0	1.9	1.9	1.9	2.1	2.0	2.4	2.6	2.85	2.9	2.0
3	2.1	2.0	1.9	1.9	1.9	2.05	1.95	2.4	2.65	2.9	2.95	2.0
4	2.1	2.0	1.9	1.95	1.9	2.0	1.95	2.45	2.6	3.0	2.9	2.0
5	2.1	2.0	1.9	1.95	1.9	2.0	1.95	2.5	2.6	3.0	2.85	2.0
6	2.15	2.0	1.9	1.95	1.9	2.0	1.95	2.2	2.6	3.0	2.8	2.0
7	2.2	2.0	-----	1.95	1.9	1.95	1.95	2.3	2.6	3.0	2.8	2.0
8	2.2	2.0	1.9	1.95	1.9	2.0	1.95	2.35	2.6	3.0	2.75	2.0
9	2.2	2.0	1.9	1.95	1.9	2.0	2.0	2.4	2.6	3.1	2.7	2.0
10	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.45	2.7	3.15	2.6	2.0
11	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.5	2.65	3.15	2.5	2.0
12	2.1	2.0	1.9	1.9	1.9	-----	2.0	2.5	2.6	3.0	2.5	2.5
13	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.4	2.65	3.0	2.5	2.5
14	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.35	2.7	3.0	2.5	2.1
15	2.1	2.0	1.9	1.9	1.9	2.0	2.0	2.3	2.7	3.0	2.45	2.1
16	2.1	2.0	1.9	2.0	1.9	1.95	2.0	2.3	2.65	3.05	2.4	2.0
17	2.1	2.0	1.9	1.95	1.9	1.95	2.0	2.4	2.55	2.95	2.4	2.0
18	2.1	2.0	1.9	1.95	1.9	1.95	2.0	2.4	2.6	2.8	2.35	2.0
19	2.1	2.0	1.9	1.95	1.95	1.9	2.0	2.4	2.5	2.8	-----	2.0
20	2.1	2.0	1.9	1.95	1.9	1.9	2.1	2.4	2.5	2.85	2.3	2.0
21	2.1	2.0	1.9	1.95	1.95	1.95	2.15	2.4	2.6	2.85	2.3	2.0
22	2.05	1.95	1.9	1.9	1.95	-----	2.2	2.4	2.6	2.8	2.25	2.0
23	2.05	1.95	1.9	1.95	1.95	1.95	2.3	2.6	2.7	2.75	2.2	2.0
24	2.05	1.9	1.9	1.95	1.95	1.95	2.3	2.7	2.7	2.8	2.25	-----
25	2.05	1.9	1.9	1.95	1.95	1.95	2.3	2.5	2.7	2.8	2.2	2.0
26	2.05	1.9	1.9	1.95	1.95	1.95	2.35	2.7	-----	2.85	2.15	1.9
27	2.05	1.95	1.9	1.95	2.1	1.95	2.35	2.8	2.8	2.9	2.1	1.8
28	2.0	1.95	1.9	1.95	2.1	1.95	2.4	2.65	2.85	3.0	2.1	1.85
29	2.0	1.95	1.9	1.9	-----	1.95	2.4	2.7	2.85	2.95	2.1	1.85
30	2.0	1.95	1.95	1.9	-----	1.95	2.4	2.7	2.85	2.9	2.1	1.8
31	2.0	-----	1.9	1.9	-----	2.0	-----	2.6	-----	2.9	2.1	-----

Daily gage height, in feet, of Willowa River at Joseph, Oreg., for 1903-1907; 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1	1.8	1.95	2.3	2.15	2.0	2.0	2.1	2.25	-----	3.3	2.9	-----
2	1.9	-----	2.3	2.15	2.1	2.0	2.1	2.25	-----	3.35	2.9	-----
3	1.9	2.0	2.3	2.1	2.1	2.0	2.1	2.25	-----	3.4	3.0	-----
4	1.9	2.1	2.3	2.1	2.1	2.0	2.1	2.25	-----	3.5	2.9	-----
5	1.85	2.05	2.25	2.1	2.1	2.0	2.1	2.2	-----	3.5	2.95	-----
6	1.9	2.05	2.2	2.1	2.1	2.0	2.1	2.2	-----	3.5	2.9	-----
7	1.9	2.1	2.2	2.1	2.1	2.0	-----	2.2	-----	3.2	3.0	-----
8	1.9	2.1	2.2	2.1	2.1	2.0	2.1	2.25	-----	3.0	2.9	-----
9	1.9	2.1	2.2	2.1	2.1	2.0	2.1	2.2	-----	3.1	2.9	-----
10	1.9	2.1	2.2	2.1	2.1	2.0	2.1	2.2	-----	3.1	2.9	-----
11	1.9	-----	2.2	-----	2.05	2.0	2.1	2.2	-----	3.1	2.95	-----
12	1.9	2.15	2.2	2.1	2.0	2.0	2.15	2.2	-----	3.35	2.8	-----
13	1.9	2.2	2.2	2.1	2.0	2.0	2.2	2.2	3.2	3.35	2.8	-----
14	1.9	2.3	2.2	2.05	2.0	2.0	-----	2.25	3.1	3.2	2.7	-----
15	1.9	2.5	2.2	2.0	2.0	2.0	2.2	2.25	3.1	3.2	2.7	-----
16	1.9	2.6	2.2	2.0	2.0	2.0	2.2	2.3	2.9	2.9	2.65	-----
17	1.95	2.6	2.2	2.0	2.0	2.05	2.25	2.35	3.0	2.8	2.6	-----
18	1.95	2.7	2.15	2.0	2.0	2.1	-----	2.5	2.8	2.8	2.6	-----
19	1.95	2.7	2.1	2.0	2.0	2.1	2.25	2.4	2.8	2.8	2.6	-----
20	1.95	2.65	2.1	2.0	2.0	2.1	2.3	2.4	2.8	2.9	2.7	-----
21	1.95	2.65	2.2	2.0	2.0	2.15	2.3	2.4	2.9	3.0	2.7	-----
22	1.95	2.6	2.2	2.0	2.0	2.2	2.3	2.4	2.9	3.0	2.7	-----
23	1.95	2.6	2.2	2.0	2.0	2.15	2.3	2.4	2.9	3.0	2.7	-----
24	1.95	2.55	2.2	2.0	2.0	2.15	2.3	2.5	2.9	3.15	-----	-----
25	1.95	2.55	2.15	2.0	2.0	2.15	2.3	2.55	2.95	3.1	-----	-----
26	1.9	2.5	2.1	2.0	2.0	2.15	2.3	2.6	3.0	3.0	-----	-----
27	1.9	2.45	2.1	2.0	2.0	2.1	2.25	2.7	3.1	3.0	-----	-----
28	1.95	2.4	2.15	2.0	2.0	2.1	2.25	2.8	3.25	3.0	-----	-----
29	1.95	2.4	2.2	2.0	-----	2.1	2.25	2.8	3.4	3.0	-----	-----
30	1.9	2.35	2.15	2.0	-----	2.1	2.25	3.0	3.35	3.05	-----	-----
31	1.95	-----	2.15	2.0	-----	-----	-----	-----	-----	3.0	-----	-----
1908.												
1	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.15	2.9	2.1
2	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	2.9	2.1
3	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	2.9	2.1
4	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	3.0	2.1
5	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	3.0	2.1
6	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	3.0	2.2
7	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	3.0	2.2
8	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	3.0	2.2
9	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	3.0	2.2
10	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	2.9	2.2
11	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.3	2.9	2.2
12	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.3	2.9	-----
13	-----	-----	-----	-----	-----	-----	-----	-----	-----	3.2	2.9	-----
14	-----	-----	-----	-----	-----	-----	-----	-----	2.8	3.2	2.8	-----
15	-----	-----	-----	-----	-----	-----	-----	-----	2.92	3.1	2.8	-----
16	-----	-----	-----	-----	-----	-----	-----	-----	2.9	3.1	2.7	-----
17	-----	-----	-----	-----	-----	-----	-----	-----	2.92	3.0	2.7	-----
18	-----	-----	-----	-----	-----	-----	-----	-----	2.92	2.9	2.6	-----
19	-----	-----	-----	-----	-----	-----	-----	-----	2.92	2.8	2.6	-----
20	-----	-----	-----	-----	-----	-----	-----	-----	2.92	2.8	2.6	-----
21	-----	-----	-----	-----	-----	-----	-----	-----	2.8	2.8	2.5	-----
22	-----	-----	-----	-----	-----	-----	-----	-----	2.8	2.8	2.5	-----
23	-----	-----	-----	-----	-----	-----	-----	-----	2.82	2.8	2.5	-----
24	-----	-----	-----	-----	-----	-----	-----	-----	2.4	2.8	2.4	-----
25	-----	-----	-----	-----	-----	-----	-----	-----	2.88	2.8	2.4	-----
26	-----	-----	-----	-----	-----	-----	-----	-----	2.9	2.8	2.4	-----
27	-----	-----	-----	-----	-----	-----	-----	-----	2.9	2.7	2.3	-----
28	-----	-----	-----	-----	-----	-----	-----	-----	3.12	2.7	2.3	-----
29	-----	-----	-----	-----	-----	-----	-----	-----	3.14	2.7	2.3	-----
30	-----	-----	-----	-----	-----	-----	-----	-----	3.15	2.8	2.3	-----
31	-----	-----	-----	-----	-----	-----	-----	-----	-----	2.9	2.2	-----

Daily gage height, in feet, of Wallowa River at Joseph, Oreg., for 1903-1907; 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1		2.1	1.9	1.9	2.0	1.8	2.1	2.0	2.9	3.3	2.9	2.6
2		2.1	1.9	1.9	2.0	1.8	2.1	2.0	2.9	3.3	2.9	2.6
3		2.1	1.9	1.9	2.0	1.8	2.1	2.0	2.9	3.3	3.0	2.6
4		2.1	1.9	1.9	2.0	1.8	2.1	2.0	2.9	3.2	3.0	2.6
5		2.1	1.9	1.9	2.0	1.8	2.1	2.0	3.1	3.2	3.0	2.5
6		2.1	2.0	1.9	2.0	1.8	2.1	2.0	3.2	3.2	3.0	2.5
7		2.1	2.0	1.9	2.0	1.8	2.1	2.0	3.2	3.2	3.0	2.5
8		2.1	2.0	1.9	2.0	1.8	2.1	2.0	3.2	3.2	3.0	2.5
9		2.1	2.0	1.9	2.0	1.8	2.1	2.0	3.2	3.2	3.0	2.5
10		2.1	2.0	1.9	2.0	1.8	2.1	2.0	3.2	3.2	3.0	2.5
11		2.1	2.0	1.9	2.0	1.8	2.0	2.0	3.2	3.0	3.0	2.5
12		2.1	2.0	1.9	2.0	1.8	2.0	2.0	3.2	3.0	3.0	2.4
13		2.1	2.0	1.9	2.0	1.8	2.0	2.0	3.2	3.0	3.0	2.4
14		2.1	2.0	1.9	1.9	1.8	2.0	2.0	3.2	2.8	3.0	2.4
15		2.1	2.0	1.9	1.9	1.8	2.0	2.0	3.2	2.8	3.0	2.4
16		2.1	2.0	1.9	1.9	1.8	2.0	2.0	3.2	2.8	3.0	2.3
17		2.1	2.0	1.9	1.8	1.9	2.0	2.0	3.3	2.8	2.9	2.3
18		2.0	2.0	1.9	1.8	1.9	2.0	2.0	3.3	2.8	2.9	2.3
19	2.3	2.0	2.0	1.9	1.8	1.9	2.0	2.0	3.3	2.8	2.8	2.15
20	2.3	2.0	2.0	1.9	1.8	1.9	2.0	2.0	3.3	2.8	2.8	2.15
21	2.3	2.0	2.0	1.9	1.8	2.0	2.0	2.4	3.3	2.8	2.8	2.15
22	2.3	2.0	2.0	1.9	1.8	2.0	2.0	2.4	3.3	2.8	2.8	2.15
23	2.3	2.0	2.0	1.9	1.8	2.0	2.0	2.4	3.3	2.8	2.8	2.15
24	2.3	2.0	1.9	2.0	1.8	2.0	2.0	2.4	3.3	2.8	2.7	2.15
25	2.2	2.0	1.9	2.0	1.8	2.0	2.0	2.4	3.2	2.8	2.7	2.15
26	2.2	2.0	1.9	2.0	1.8	2.0	2.0	2.7	3.2	2.8	2.7	2.15
27	2.2	2.0	1.9	2.0	1.8	2.0	2.0	2.7	3.2	2.9	2.6	2.15
28	2.2	2.0	1.9	2.0	1.8	2.0	2.0	2.7	3.2	2.9	2.6	2.15
29	2.2	2.0	1.9	2.0		2.0	2.0	2.7	3.2	2.9	2.6	2.15
30	2.2	2.0	1.9	2.0		2.0	2.0	2.7	3.2	2.9	2.6	2.15
31	2.2		1.9	2.0		2.0		2.7		2.9	2.6	
1909-10.												
1	2.15	2.1	2.2	2.2	2.0	2.0	2.3	2.6	3.1	3.0	2.6	2.1
2	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.6	3.1	3.0	2.6	2.1
3	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.6	3.2	2.8	2.5	2.1
4	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.6	3.2	2.8	2.4	2.1
5	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.6	3.1	2.8	2.4	2.1
6	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.6	3.1	2.8	2.4	2.1
7	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.6	3.1	2.5	2.4	2.1
8	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.7	3.1	2.5	2.4	2.1
9	2.15	2.1	2.2	2.1	2.0	2.0	2.3	2.7	3.1	2.5	2.4	2.1
10	2.15	2.1	2.2	2.0	2.0	2.0	2.4	2.7	3.1	2.6	2.3	2.1
11	2.15	2.1	2.2	2.0	2.0	2.0	2.4	2.7	3.1	2.6	2.3	2.0
12	2.15	2.1	2.2	2.0	2.0	2.0	2.4	2.8	3.1	2.6	2.3	2.0
13	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.8	3.1	2.8	2.3	2.0
14	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.8	3.1	2.8	2.3	2.0
15	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.9	3.1	2.9	2.3	2.0
16	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.9	3.1	2.9	2.3	2.0
17	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.9	3.1	2.9	2.3	2.0
18	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.9	3.1	2.8	2.3	2.0
19	2.15	2.1	2.2	2.0	2.0	2.1	2.4	2.9	3.0	2.8	2.3	2.0
20	2.15	2.1	2.2	2.0	2.0	2.2	2.4	3.0	3.0	2.8	2.3	2.0
21	2.15	2.2	2.2	2.0	2.0	2.2	2.4	3.0	3.0	2.8	2.2	2.0
22	2.15	2.2	2.2	2.0	2.0	2.2	2.5	3.0	3.0	2.8	2.2	2.0
23	2.15	2.2	2.2	2.0	2.0	2.2	2.5	3.0	3.0	2.8	2.2	2.0
24	2.1	2.2	2.2	2.0	2.0	2.2	2.5	3.0	3.0	2.8	2.2	2.0
25	2.1	2.2	2.2	2.0	2.0	2.2	2.5	3.0	3.0	2.8	2.2	2.0
26	2.1	2.2	2.2	2.0	2.0	2.2	2.6	3.0	3.0	2.7	2.2	2.0
27	2.1	2.2	2.2	2.0	2.0	2.3	2.6	3.0	3.0	2.7	2.2	2.0
28	2.1	2.2	2.2	2.0	2.0	2.3	2.6	3.0	3.0	2.7	2.2	2.0
29	2.1	2.2	2.2	2.0		2.3	2.6	3.0	3.0	2.6	2.2	2.0
30	2.1	2.2	2.2	2.0		2.3	2.6	3.0	3.0	2.6	2.2	2.0
31	2.1		2.2	2.0		2.3		3.0		2.6	2.2	

NOTE.—Gage heights prior to Mar. 31, 1905, refer to gage on lake; Mar. 31 to July 11, 1905, to temporary gage 100 feet below dam; beginning July 12, 1905, to gage 300 feet below dam.

*Daily discharge, in second-feet, of Willowa River at Joseph, Oreg., for 1903-1907;
1908-1910.*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.			91	79	45	73	73	157	473	677	315	185
2.			97	79	53	73	79	157	473	677	315	175
3.			97	79	58	73	68	157	473	728	288	175
4.			91	79	58	73	66	157	473	728	288	175
5.			89	79	58	79	63	157	473	711	288	166
6.			91	79	58	79	63	157	490	711	288	166
7.			91	79	53	79	63	157	490	711	262	166
8.			91	75	53	79	63	157	490	694	262	157
9.			91	75	53	79	63	157	507	677	262	157
10.			89	75	53	79	66	157	507	677	262	157
11.			89	75	53	85	70	170	507	660	262	149
12.			91	73	58	85	73	175	507	643	262	149
13.		91	85	73	58	85	79	185	507	626	238	141
14.		97	85	73	58	85	87	195	507	575	238	141
15.		97	79	73	58	73	110	205	507	558	238	141
16.		91	91	73	68	73	125	216	541	507	238	133
17.		85	89	73	68	73	133	234	575	439	234	133
18.		85	91	73	73	73	141	262	600	406	238	125
19.		91	91	73	79	79	149	283	643	374	238	125
20.		91	85	73	79	79	157	288	677	344	238	117
21.		97	85	73	73	79	157	301	677	359	216	117
22.		97	79	73	73	79	157	329	677	344	216	110
23.		97	79	73	73	79	157	374	643	390	216	103
24.		103	77	73	73	79	157	422	609	406	205	97
25.		103	78	68	73	73	149	439	592	439	205	90
26.		97	78	68	68	73	149	439	575	575	195	89
27.		101	79	63	68	79	149	422	575	406	195	89
28.		91	79	58	68	73	149	422	592	406	195	85
29.		91	79	58	69	85	149	422	626	390	185	97
30.		91	79	58		85	149	422	643	374	185	85
31.			79	58		79		456		344	185	
1904-5.												
1.	85	73	63	73	53	53	69	124	434	299	350	90
2.	85	73	63	73	53	53	69	124	561	252	350	90
3.	85	73	63	73	53	53	75	124	597	252	299	77
4.	85	73	63	73	53	53	81	124	597	252	299	77
5.	85	73	63	63	53	53	81	124	675	252	252	77
6.	85	73	63	63	53	53	81	124	717	299	230	77
7.	85	73	63	63	53	53	81	124	675	324	209	77
8.	85	63	63	63	53	53	81	124	597	324	209	77
9.	97	63	63	63	45	53	81	124	495	252	209	77
10.	85	63	63	63	45	53	87	94	495	252	170	77
11.	73	63	63	63	53	53	94	94	561	252	170	77
12.	97	63	63	63	53	53	69	94	495	209	170	77
13.	97	63	63	63	53	53	69	94	561	350	170	77
14.	97	63	63	63	53	53	75	94	561	350	170	77
15.	97	63	63	63	53	53	81	81	495	299	152	77
16.	97	63	63	63	53	63	81	69	495	299	135	65
17.	97	63	63	63	53	63	94	69	495	252	135	54
18.	97	63	63	63	53	63	94	75	495	252	135	65
19.	85	63	63	63	53	63	94	104	434	252	135	54
20.	85	63	53	53	58	73	94	90	377	290	119	54
21.	85	63	63	53	63	73	101	77	405	350	119	54
22.	85	63	63	63	53	73	101	77	405	350	135	54
23.	85	63	63	63	53	73	101	90	405	350	119	54
24.	85	63	63	63	53	73	101	119	377	290	119	54
25.	85	63	63	63	53	73	108	135	350	350	119	54
26.	73	63	63	63	53	73	108	104	350	252	119	54
27.	73	63	53	63	53	73	108	104	324	299	104	54
28.	73	63	53	63	53	73	108	77	252	299	104	65
29.	73	63	63	63		85	116	90	252	299	104	104
30.	73	63	73	63		97	116	90	252	299	104	104
31.	73		73	63		81		405		350	104	

Daily discharge, in second-feet, of Willowa River at Joseph, Oreg., for 1903-1907,
1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	77	54	35	35	35	77	54	170	252	350	405	65
2.....	77	54	35	35	35	77	54	170	252	377	405	54
3.....	77	54	35	35	35	65	44	170	275	405	434	54
4.....	77	54	35	44	35	54	44	189	252	464	405	54
5.....	77	54	35	44	35	54	44	209	252	464	377	54
6.....	90	54	35	44	35	54	44	104	252	464	350	54
7.....	104	54	35	44	35	44	44	135	252	464	350	54
8.....	104	54	35	44	35	54	44	152	252	464	324	54
9.....	104	54	35	44	35	54	54	170	252	527	299	54
10.....	77	54	35	35	35	54	54	189	299	561	252	54
11.....	77	54	35	35	35	54	54	209	275	561	209	54
12.....	77	54	35	35	35	54	54	209	252	464	209	209
13.....	77	54	35	35	35	54	54	170	275	464	209	209
14.....	77	54	35	35	35	54	54	152	299	464	209	77
15.....	77	54	35	35	35	54	54	135	299	464	189	77
16.....	77	54	35	54	35	44	54	135	275	495	170	54
17.....	77	54	35	44	35	44	54	170	230	434	170	54
18.....	77	54	35	44	35	44	54	170	252	350	152	54
19.....	77	54	35	44	44	35	54	170	209	350	144	54
20.....	77	54	35	44	35	35	77	170	209	377	135	54
21.....	77	54	35	44	44	44	90	170	252	377	135	54
22.....	65	44	35	35	44	44	104	170	252	350	119	54
23.....	65	44	35	44	44	44	135	252	299	324	104	54
24.....	65	35	35	44	44	44	135	299	299	350	119	54
25.....	65	35	35	44	44	44	135	299	299	350	104	54
26.....	65	35	35	44	44	44	152	299	324	377	90	35
27.....	65	44	35	44	77	44	152	350	350	405	77	26
28.....	54	44	35	44	77	44	170	275	377	464	77	30
29.....	54	44	35	35	-----	44	170	299	377	434	77	30
30.....	54	44	44	35	-----	44	170	299	377	405	77	26
31.....	54	-----	35	35	-----	54	-----	252	-----	405	77	-----
1906-7.												
1.....	26	44	135	86	53	53	74	112	-----	617	365	-----
2.....	35	49	135	86	74	53	74	112	-----	654	365	-----
3.....	35	54	135	74	74	53	74	112	-----	690	420	-----
4.....	35	77	135	74	74	53	74	112	-----	765	365	-----
5.....	30	65	119	74	74	53	74	98	-----	765	392	-----
6.....	35	65	104	74	74	53	74	98	-----	765	365	-----
7.....	35	77	104	74	74	53	74	98	-----	545	420	-----
8.....	35	77	104	74	74	53	74	112	-----	420	365	-----
9.....	35	77	104	74	74	53	74	98	-----	480	365	-----
10.....	35	77	104	74	74	53	74	98	-----	480	365	-----
11.....	35	77	104	74	64	53	74	98	-----	480	392	-----
12.....	35	90	104	74	53	53	86	98	-----	654	315	-----
13.....	35	104	104	74	53	53	98	98	545	654	315	-----
14.....	35	135	104	64	53	53	98	112	480	545	270	-----
15.....	35	209	104	53	53	53	98	112	480	545	270	-----
16.....	35	252	104	53	53	53	98	125	365	365	250	-----
17.....	44	252	104	53	53	64	112	140	420	315	230	-----
18.....	44	299	90	53	53	74	112	192	315	315	230	-----
19.....	44	299	77	53	53	74	112	156	315	315	230	-----
20.....	44	275	77	53	53	74	125	156	315	365	270	-----
21.....	44	275	104	53	53	86	125	156	365	420	270	-----
22.....	44	252	104	53	53	98	125	156	365	420	270	-----
23.....	44	252	104	53	53	86	125	156	365	420	270	-----
24.....	44	230	104	53	53	86	125	192	365	512	-----	-----
25.....	44	230	90	53	53	86	125	211	392	480	-----	-----
26.....	35	209	77	53	53	86	125	230	420	420	-----	-----
27.....	35	189	77	53	53	74	112	270	480	420	-----	-----
28.....	44	170	90	53	53	74	112	315	581	420	-----	-----
29.....	44	170	104	53	-----	74	112	315	690	420	-----	-----
30.....	35	152	90	53	-----	74	112	420	654	450	-----	-----
31.....	44	-----	90	53	-----	74	-----	420	-----	420	-----	-----

Daily discharge, in second-feet, of Wallowa River at Joseph, Oreg., for 1903-1907,
1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908.												
1										512	365	74
2										545	365	74
3										545	365	74
4										545	420	74
5										545	420	74
6										545	420	98
7										545	420	98
8										545	420	98
9										545	420	98
10										545	365	98
11										617	365	98
12										617	365	
13										545	365	
14									315	545	315	
15									376	480	315	
16									365	480	270	
17									376	420	270	
18									376	365	230	
19									376	315	230	
20									376	315	230	
21									315	315	192	
22									315	315	192	
23									325	315	192	
24									315	315	156	
25									355	315	156	
26									365	315	156	
27									365	270	125	
28									493	270	125	
29									506	270	125	
30									512	315	125	
31										365	98	
1908-9.												
1		74	36	41	60	26	80	60	375	630	375	240
2		74	36	41	60	26	80	60	375	630	375	240
3		74	36	41	60	26	80	60	375	630	435	240
4		74	36	41	60	26	80	60	375	560	435	240
5		74	36	41	60	26	80	60	495	560	435	200
6		74	53	41	60	26	80	60	560	560	435	200
7		74	53	41	60	26	80	60	560	560	435	200
8		74	53	41	60	26	80	60	560	560	435	200
9		74	53	41	60	26	80	60	560	560	435	200
10		74	53	41	60	26	80	60	560	560	435	200
11		74	53	41	60	26	60	60	560	435	435	200
12		74	53	41	60	26	60	60	560	435	435	165
13		74	53	41	60	26	60	60	560	435	435	165
14		74	53	41	41	26	60	60	560	325	435	165
15		74	53	41	41	26	60	60	560	325	435	165
16		74	53	41	41	26	60	60	560	325	435	135
17		74	53	41	26	41	60	60	630	325	375	135
18		53	53	41	26	41	60	60	630	325	375	135
19	125	53	53	41	26	41	60	60	630	325	325	92
20	125	53	53	41	26	41	60	60	630	325	325	92
21	125	53	53	41	26	60	60	165	630	325	325	92
22	125	53	53	41	26	60	60	165	630	325	325	92
23	125	53	53	41	26	60	60	165	630	325	325	92
24	125	53	36	60	26	60	60	165	630	325	280	92
25	98	53	36	60	26	60	60	165	560	325	280	92
26	98	53	36	60	26	60	60	280	560	325	280	92
27	98	53	36	60	26	60	60	280	560	375	240	92
28	98	53	36	60	26	60	60	280	560	375	240	92
29	98	53	36	60	26	60	60	280	560	375	240	92
30	98	53	36	60	26	60	60	280	560	375	240	92
31	98	36	60	60	26	60	280	280	375	240	92	

*Daily discharge, in second-feet, of Willowa River at Joseph, Oreg., for 1903-1907,
1908-1910—Continued.*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	92	80	105	105	60	60	135	240	495	435	240	80
2.....	92	80	105	80	60	60	135	240	495	435	240	80
3.....	92	80	105	80	60	60	135	240	560	325	200	80
4.....	92	80	105	80	60	60	135	240	560	325	165	80
5.....	92	80	105	80	60	60	135	240	495	325	165	80
6.....	92	80	105	80	60	60	135	240	495	325	165	80
7.....	92	80	105	80	60	60	135	240	495	200	165	80
8.....	92	80	105	80	60	60	135	280	495	200	165	80
9.....	92	80	105	80	60	60	135	280	495	200	165	80
10.....	92	80	105	60	60	60	165	280	495	240	135	80
11.....	92	80	105	60	60	60	165	280	495	240	135	60
12.....	92	80	105	60	60	60	165	325	495	240	135	60
13.....	92	80	105	60	60	80	165	325	495	325	135	60
14.....	92	80	105	60	60	80	165	325	495	325	135	60
15.....	92	80	105	60	60	80	165	375	495	375	135	60
16.....	92	80	105	60	60	80	165	375	495	375	135	60
17.....	92	80	105	60	60	80	165	375	495	375	135	60
18.....	92	80	105	60	60	80	165	375	495	325	135	60
19.....	92	80	105	60	60	80	165	375	435	325	135	60
20.....	92	80	105	60	60	105	165	435	435	325	135	60
21.....	92	105	105	60	60	105	165	435	435	325	105	60
22.....	92	105	105	60	60	105	200	435	435	325	105	60
23.....	92	105	105	60	60	105	200	435	435	325	105	60
24.....	80	105	105	60	60	105	200	435	435	325	105	60
25.....	80	105	105	60	60	105	200	435	435	325	105	60
26.....	80	105	105	60	60	105	240	435	435	280	105	60
27.....	80	105	105	60	60	135	240	435	435	280	105	60
28.....	80	105	105	60	60	135	240	435	435	280	105	60
29.....	80	105	105	60	.....	135	240	435	435	240	105	60
30.....	80	105	105	60	.....	135	240	435	435	240	105	60
31.....	80	.....	105	60	.....	135	.....	435	.....	240	105	.....

NOTE.—Daily discharge determined as follows:

1903 to 1906. Nov. 13, 1903, to Mar. 30, 1905, from rating curve for gage in lake well defined between 80 and 500 second-feet; Mar. 31 to May 18, from poorly defined curve for temporary gage; May 19 to July 11, from curve fairly well defined for temporary gage; July 12, 1905, to Dec. 31, 1906, from fairly well defined curve.

1907 and 1908. From poorly defined rating curve.

1909 and 1910. From curve well defined between 60 and 150 second-feet and fairly well defined below 500 second-feet.

Discharge interpolated for days on which gage was not read.

Monthly discharge of Willowa River at Joseph, Oreg., for 1903-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
November 13-30.....	103	85	94.2	3,360	B.
December.....	97	77	86.0	5,290	B.
January.....	79	58	72.0	4,430	B.
February.....	79	45	63.1	3,630	B.
March.....	85	73	78.0	4,800	B.
April.....	157	63	110	6,540	B.
May.....	456	157	266	16,400	A.
June.....	677	473	555	33,000	B.
July.....	728	344	534	32,800	B.
August.....	315	185	240	14,800	C.
September.....	185	85	133	7,910	C.
The period.....				133,000	

Monthly discharge of Willowa River at Joseph, Oreg., for 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
October.....	97	73	85.4	5,250	B.
November.....	73	63	65.3	3,890	B.
December.....	73	53	62.7	3,860	B.
January.....	73	53	63.6	3,910	B.
February.....	63	45	53.0	2,940	B.
March.....	97	53	63.5	3,900	B.
April.....	90	54	90.0	5,360	C.
May.....	405	69	111	6,820	C.
June.....	717	252	473	28,100	B.
July.....	350	209	293	18,000	B.
August.....	350	104	172	10,600	B.
September.....	104	54	70.8	4,210	B.
The year.....	717	45	134	96,800	
1905-6.					
October.....	104	54	74.7	4,590	B.
November.....	54	35	50.1	2,980	B.
December.....	44	35	35.3	2,170	B.
January.....	54	35	40.5	2,490	C.
February.....	77	35	40.2	2,230	C.
March.....	77	35	50.1	3,080	C.
April.....	170	44	81.9	4,870	B.
May.....	350	104	201	12,400	B.
June.....	377	209	279	16,600	B.
July.....	561	324	426	26,200	B.
August.....	434	77	208	12,800	B.
September.....	209	26	62.1	3,700	C.
The year.....	561	26	129	94,100	
1906-7.					
October.....	44	26	38.0	2,340	C.
November.....	299	44	159	9,460	B.
December.....	135	77	103	6,330	B.
January.....	86	53	62.9	3,870	C.
February.....	74	53	60.1	3,340	C.
March.....	98	53	65.5	4,030	C.
April.....	125	74	98.4	5,860	B.
May.....	420	98	167	10,300	B.
June 13-30.....	690	315	440	15,700	B.
July.....	765	315	501	30,800	B.
August 1-23.....	420	230	320	14,600	B.
1908.					
June 14-30.....	512	315	378	12,700	C.
July.....	617	270	435	26,700	C.
August.....	420	98	277	17,000	C.
September 1-11.....	98	74	87.1	1,900	C.
The period.....				58,300	
1908-9.					
October 19-31.....	125	98	110	2,830	B.
November.....	74	53	64.9	3,860	B.
December.....	53	36	45.9	2,820	C.
January.....	60	41	45.9	2,820	C.
February.....	60	26	43.4	2,410	C.
March.....	60	26	40.0	2,460	C.
April.....	80	60	66.7	3,970	B.
May.....	280	60	120	7,350	B.
June.....	630	375	552	32,800	B.
July.....	630	325	426	26,200	B.
August.....	435	240	363	22,300	B.
September.....	240	92	151	8,980	B.
The period.....				119,000	
1909-10.					
October.....	92	80	88.9	5,470	C.
November.....	105	80	88.3	5,250	C.
December.....	105	105	105	6,460	C.
January.....	105	60	66.6	4,100	B.
February.....	60	60	60.0	3,330	B.
March.....	135	60	86.8	5,340	B.
April.....	240	135	173	10,300	B.
May.....	435	240	351	21,600	B.
June.....	560	435	475	28,300	B.
July.....	435	200	304	18,700	B.
August.....	240	105	139	8,550	B.
September.....	80	60	66.7	3,970	B.
The year.....	560	60	167	121,000	

WALLOWA RIVER NEAR WALLOWA, OREG.

Location.—About sec. 10, T. 1 N., R. 42 E., at county bridge $1\frac{1}{2}$ miles below Wallowa and one-fourth mile below the mouth of Bear Creek.

Records presented.—November 14, 1903, to March 31, 1907.

Drainage area.—510 square miles.

Gage.—Vertical staff.

Channel.—Gravel; shifts somewhat.

Discharge measurements.—Made from bridge.

Winter flow.—Slightly affected by ice.

Diversions.—A large amount of water is diverted above the station and used for irrigation in Wallowa Valley; one small ditch carries water around the gage.

Accuracy.—Results good.

Discharge measurements of Wallowa River near Wallowa, Oreg., in 1903-1907.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903. Nov. 14	J. H. Lewis.....	<i>Feet.</i> 2.07	<i>Sec.-ft.</i> 417	1905. Sept. 18 Nov. 29	W. C. Sawyer..... R. S. Hall.....	<i>Feet.</i> 1.72 1.90	<i>Sec.-ft.</i> 199 261
1904. July 19 Aug. 19 Sept. 24	W. C. Sawyer..... .....do..... .....do.....	3.09 2.12 1.82	1,060 379 268	1906. May 22 June 26 Dec. 8	R. S. Hall..... .....do..... Stevens and McGlashan	2.78 3.11 2.22	794 1,120 528
1905. Mar. 31 May 19 July 8	W. C. Sawyer..... .....do..... .....do.....	1.93 2.86 2.56	322 816 614	1907. May 4	I. E. Oakes.....	2.50	669

Daily gage height, in feet, of Wallowa River near Wallowa, Oreg., for 1903-1907.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....			2.26	1.70	1.70	1.95	2.2	2.7	3.8	4.2	.....	2.1
2.....			2.35	1.70	1.70	1.85	2.3	2.8	3.6	4.1	.....	2.1
3.....			2.25	1.70	1.68	1.85	2.4	2.75	3.6	4.2	.....	2.1
4.....			2.18	1.72	1.70	1.9	2.4	2.8	3.5	4.0	.....	2.1
5.....			2.10	1.75	1.70	1.95	2.5	2.8	3.7	4.0	2.3	2.1
6.....			2.10	1.75	1.72	2.0	2.8	2.7	4.0	4.1	2.3	2.0
7.....			2.05	1.74	1.68	3.02	2.5	2.7	4.0	4.0	2.0	2.0
8.....			2.00	1.78	1.62	3.75	2.5	2.7	3.7	3.9	2.0	2.0
9.....			2.00	1.72	1.56	2.9	2.55	2.75	3.7	4.0	2.2	2.0
10.....			2.00	1.72	1.50	2.6	2.8	2.75	3.7	4.0	2.2	2.0
11.....			2.00	1.74	1.70	2.7	2.8	2.8	3.5	4.0	2.3	2.0
12.....			1.96	1.74	1.88	2.55	2.7	2.9	3.5	3.9	2.2	2.0
13.....			1.95	1.80	1.68	2.45	2.8	2.9	3.5	3.7	2.2	2.0
14.....		2.08	1.92	1.80	1.60	2.45	3.5	3.3	3.5	3.5	2.2	1.9
15.....		2.04	1.92	1.75	1.68	2.5	3.7	3.0	3.3	3.4	2.2	1.9
16.....		1.96	1.95	1.75	2.00	2.3	3.8	3.0	3.9	3.4	2.2	1.9
17.....		1.90	1.98	1.80	1.85	2.3	3.5	3.1	3.7	3.2	2.2	1.9
18.....		1.86	1.95	1.80	1.60	2.3	3.5	3.3	4.2	3.1	2.2	1.9
19.....		1.90	1.84	1.70	1.70	2.3	3.4	3.3	4.1	3.1	2.1	1.9
20.....		1.92	1.80	1.65	1.75	2.3	3.4	3.2	4.0	3.1	2.1	1.8
21.....		2.08	1.90	1.60	1.78	2.3	3.2	3.5	3.9	3.2	2.1	1.8
22.....		2.50	1.90	1.60	2.40	2.2	3.1	3.7	4.0	3.3	2.1	1.8
23.....		2.40	1.88	1.60	2.50	2.2	3.0	4.0	3.7	3.2	2.1	1.8
24.....		2.35	1.80	1.60	2.25	2.1	2.8	4.2	3.4	3.2	2.1	1.8
25.....		2.30	1.80	1.60	2.20	2.1	2.8	3.8	3.3	3.0	2.1	1.8
26.....		2.25	1.80	1.60	2.20	2.55	2.8	3.5	3.2	3.0	2.1	1.8
27.....		2.20	1.80	1.60	2.20	2.0	2.9	3.5	3.3	2.9	2.0	1.8
28.....		2.18	1.75	1.60	2.00	2.0	2.9	3.5	3.3	2.8	2.2	1.8
29.....		2.15	1.70	1.60	2.00	2.4	2.9	3.5	3.5	2.7	2.2	1.8
30.....		2.18	1.60	1.60	.....	2.4	2.8	3.7	3.6	2.6	2.2	1.8
31.....		1.65	1.65	.....	2.2	.....	3.2	.....	2.0	2.2	.....

Daily gage height, in feet, of Willowa River near Willowa, Oreg., for 1903-1907—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	1.8	1.9	1.9	2.0	1.7	1.9	2.0	2.4	3.9	2.8	1.9	1.7
2.....	1.8	1.9	1.9	1.9	1.8	1.9	2.0	2.4	3.9	2.8	1.9	1.7
3.....	1.8	1.9	1.8	1.9	1.8	2.0	2.0	2.5	4.0	2.8	1.9	1.7
4.....	1.8	1.9	1.7	1.8	1.8	2.0	2.0	2.5	4.0	2.8	1.9	1.7
5.....	1.8	1.9	1.7	1.7	1.8	2.0	2.0	2.5	3.8	2.8	1.9	1.7
6.....	2.0	1.9	1.7	1.8	1.8	2.0	2.1	2.5	3.7	2.8	1.8	1.7
7.....	2.0	1.9	1.7	1.8	1.8	2.0	2.1	2.6	3.6	2.8	1.8	1.7
8.....	1.9	1.9	1.7	1.8	1.8	2.0	2.3	2.7	3.7	2.5	1.8	1.7
9.....	1.9	1.9	1.8	1.8	1.7	2.0	2.3	2.8	4.2	2.5	1.7	1.7
10.....	1.9	1.9	1.7	1.8	1.7	2.0	2.3	2.2	4.0	2.5	1.7	1.7
11.....	1.9	1.9	1.8	1.7	1.5	2.0	2.2	2.6	4.0	2.3	1.7	1.7
12.....	2.0	1.9	1.8	1.8	1.5	2.0	2.2	2.5	4.0	2.3	1.7	1.7
13.....	2.0	1.9	1.8	2.2	2.0	2.0	2.2	2.5	3.9	2.3	1.7	1.7
14.....	2.0	1.9	1.8	1.8	2.3	2.1	2.1	2.5	3.8	2.3	1.7	1.7
15.....	2.1	1.9	1.8	1.8	2.3	2.1	2.1	2.4	3.6	2.2	1.6	1.7
16.....	2.1	1.9	1.8	1.8	2.5	2.1	2.1	2.5	3.9	2.2	1.6	1.8
17.....	2.1	1.9	1.8	1.8	2.5	2.1	2.1	3.0	3.7	2.2	1.7	1.8
18.....	2.0	1.9	1.8	1.8	2.5	2.1	2.0	2.9	3.0	2.0	1.7	1.8
19.....	2.0	1.9	1.8	1.8	1.7	2.1	2.1	2.9	3.0	2.0	1.7	1.7
20.....	2.0	1.9	1.8	1.8	1.9	2.1	2.1	3.0	3.1	2.0	1.7	1.7
21.....	2.0	1.9	1.8	1.8	2.0	2.1	2.2	2.8	3.1	1.9	1.7	1.7
22.....	2.0	1.9	1.8	1.8	2.0	2.1	2.2	2.7	3.1	1.8	1.7	1.7
23.....	2.0	1.9	1.8	1.8	2.0	2.0	2.3	2.6	3.1	1.8	1.7	1.7
24.....	2.0	1.9	1.8	1.9	2.0	2.0	2.4	2.5	3.2	1.8	1.7	1.7
25.....	2.0	1.9	1.8	2.3	2.0	2.0	2.5	2.5	3.1	1.8	1.7	1.7
26.....	1.9	1.9	1.8	2.0	2.0	2.1	2.8	2.6	3.0	1.9	1.7	1.7
27.....	1.9	1.9	1.8	2.0	2.0	2.1	2.7	2.9	2.9	1.9	1.7	1.9
28.....	1.9	2.0	1.8	2.0	2.0	2.0	2.5	3.0	2.8	1.8	1.7	2.0
29.....	1.9	1.9	1.8	1.9	-----	2.0	2.4	3.0	2.7	1.9	1.7	2.0
30.....	1.9	1.9	2.1	1.9	-----	2.0	2.5	3.2	2.9	1.9	1.7	2.0
31.....	1.9	-----	2.1	1.8	-----	2.0	-----	3.5	-----	1.9	1.7	-----
1905-6.												
1.....	2.0	2.0	1.85	1.7	1.75	1.9	2.7	2.8	3.0	3.0	1.9	1.9
2.....	1.9	2.0	1.85	1.8	1.7	1.8	2.5	2.9	3.1	3.1	1.9	1.9
3.....	1.9	2.0	1.85	1.8	1.7	1.9	2.5	3.0	3.1	3.2	1.9	1.9
4.....	1.9	1.95	1.9	1.75	1.65	1.9	2.4	3.3	3.3	3.2	1.9	1.9
5.....	1.85	1.95	1.9	1.75	1.7	1.9	2.4	3.0	3.2	3.3	1.8	1.8
6.....	1.85	1.95	1.9	1.8	1.6	1.9	2.5	3.0	3.1	3.2	1.8	1.8
7.....	2.0	1.95	1.9	1.7	1.8	1.9	2.6	2.9	3.0	3.2	1.8	1.8
8.....	2.0	1.95	1.9	1.7	2.0	1.95	2.6	2.9	2.9	3.2	1.8	1.8
9.....	2.0	1.95	1.75	1.8	2.2	2.0	2.7	3.0	2.9	3.1	1.8	1.9
10.....	2.0	1.95	1.7	1.8	2.0	2.1	2.7	3.2	3.0	3.0	1.7	1.9
11.....	2.0	1.9	1.7	1.75	2.1	2.0	2.5	3.4	3.3	2.8	1.7	1.9
12.....	2.0	1.9	2.0	1.75	1.8	1.9	2.5	3.5	3.8	2.7	1.8	1.9
13.....	2.0	1.9	2.4	1.8	1.9	1.8	2.4	3.1	3.7	2.7	1.9	1.8
14.....	2.0	1.9	2.4	1.8	1.8	1.9	2.4	3.1	3.4	2.7	1.9	2.0
15.....	2.05	1.9	2.4	1.7	1.8	1.9	2.4	3.0	3.4	2.6	1.9	2.0
16.....	2.1	1.85	2.0	1.75	1.8	1.7	2.6	2.8	3.8	2.6	1.8	1.9
17.....	2.0	1.85	1.8	1.8	1.8	1.7	2.7	2.7	3.5	2.5	1.8	1.9
18.....	2.0	1.95	1.8	1.8	1.8	1.8	2.7	2.6	3.2	2.4	1.8	1.9
19.....	2.0	1.95	1.8	1.8	2.0	1.9	2.6	2.5	3.2	2.4	1.8	1.9
20.....	2.0	1.95	1.8	1.8	1.9	1.8	2.7	2.6	3.2	2.4	1.8	1.9
21.....	2.0	1.9	1.8	1.8	2.0	1.9	2.9	2.6	3.2	2.4	1.8	1.8
22.....	2.0	1.85	1.8	1.8	2.0	1.9	3.1	2.8	3.1	2.1	1.8	1.8
23.....	2.0	1.8	1.8	1.8	2.0	2.0	3.2	2.7	3.2	2.1	1.8	1.8
24.....	2.0	1.8	1.8	1.8	1.9	2.2	3.0	2.7	3.1	2.0	1.8	1.8
25.....	2.05	1.85	1.85	1.8	1.9	2.4	2.9	2.7	3.1	2.0	1.9	1.8
26.....	2.1	2.0	1.8	1.8	1.9	2.4	2.7	2.9	3.2	1.9	1.8	1.8
27.....	2.05	2.0	1.8	1.7	1.9	2.6	2.8	2.9	3.4	1.9	1.8	1.8
28.....	2.05	1.9	1.8	1.75	1.9	2.6	2.8	2.9	3.3	1.9	1.8	1.8
29.....	2.05	1.9	1.8	1.75	-----	2.5	2.8	2.9	3.0	1.9	1.8	1.8
30.....	2.0	1.9	1.8	1.75	-----	2.7	2.8	3.0	2.9	1.9	1.9	-----
31.....	2.0	-----	1.8	1.75	-----	2.7	-----	3.0	-----	1.9	1.9	-----

Daily gage height, in feet, of Wallowa River near Wallowa, Oreg., for 1903-1907—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.							1906-7.						
1.....	1.7	2.0	2.2	2.2	2.0	2.3	16.....	1.9	3.8	2.0	1.8	2.3	2.0
2.....	1.7	1.9	2.2	2.1	2.1	2.3	17.....	2.0	3.3	2.0	2.0	2.3	2.0
3.....	1.7	2.0	2.1	2.1	2.1	2.2	18.....	1.9	3.1	2.0	2.1	2.3	2.1
4.....	1.7	2.0	2.1	2.3	2.0	2.2	19.....	1.9	2.9	2.1	2.0	2.3	2.3
5.....	1.7	2.1	2.1	2.2	2.4	2.2	20.....	1.9	2.9	2.3	2.0	2.4	2.5
6.....	1.7	2.1	2.1	2.0	3.4	2.2	21.....	1.9	2.8	2.3	1.9	2.4	2.7
7.....	1.7	2.1	2.1	1.9	2.8	2.2	22.....	1.9	2.7	2.3	1.9	2.4	2.7
8.....	1.7	2.6	2.2	1.8	2.6	2.1	23.....	1.9	2.6	2.3	1.9	2.4	2.6
9.....	1.8	2.6	2.2	2.0	2.5	2.1	24.....	1.9	2.5	2.3	1.9	2.4	2.5
10.....	1.8	2.6	2.1	2.2	2.5	2.1	25.....	1.9	2.5	2.4	1.9	2.5	2.4
11.....	1.8	2.7	2.2	2.3	2.4	2.1	26.....	1.9	2.4	2.6	1.9	2.6	2.4
12.....	1.8	2.6	2.2	2.1	2.3	2.1	27.....	1.9	2.3	2.5	1.9	2.5	2.3
13.....	1.8	3.5	2.2	1.9	2.3	2.1	28.....	2.1	2.3	2.5	2.0	2.4	2.3
14.....	1.8	4.8	2.1	1.7	2.3	2.1	29.....	2.1	2.3	2.5	2.0	.....	2.3
15.....	1.9	4.7	2.0	1.8	2.3	2.0	30.....	2.0	2.3	2.4	2.0	.....	2.2
							31.....	2.0	.....	2.3	2.0	.....	2.2

NOTE.—Ice present during part of January, February, and December, 1905, and Jan. 1-20, 1907.

Daily discharge, in second-feet, of Wallowa River near Wallowa, Oreg., for 1903-1907.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	
1903-4.													
1.....			516	260	260	360	480	800	1,840	2,300	371	371	
2.....			570	260	260	320	540	880	1,620	2,190	371	371	
3.....			510	260	254	320	600	840	1,620	2,300	414	371	
4.....			470	268	260	340	600	880	1,500	2,070	414	371	
5.....			430	280	260	360	660	880	1,730	2,070	461	371	
6.....			430	280	268	380	880	800	2,070	2,190	461	331	
7.....			405	276	254	1,060	660	800	2,070	2,070	331	331	
8.....			380	292	236	1,790	660	800	1,730	1,960	331	331	
9.....			380	268	218	960	695	840	1,730	2,070	414	331	
10.....			380	268	200	730	880	840	1,730	2,070	414	331	
11.....			380	276	260	800	880	880	1,500	2,070	461	331	
12.....			364	276	332	695	800	960	1,500	1,960	414	331	
13.....			360	300	254	630	880	960	1,500	1,730	414	331	
14.....			420	348	300	630	1,500	1,310	1,500	1,500	414	293	
15.....			400	348	280	254	660	1,730	1,040	1,280	1,390	414	293
16.....			364	360	280	380	540	1,840	1,040	1,960	1,390	414	293
17.....			340	372	300	320	540	1,500	1,130	1,730	1,170	414	293
18.....			324	360	300	230	540	1,500	1,310	2,300	1,060	414	293
19.....			340	316	260	260	540	1,400	1,310	2,190	1,060	371	293
20.....			348	340	245	280	540	1,400	1,220	2,070	1,060	371	258
21.....			420	340	230	292	540	1,220	1,500	1,560	1,170	371	258
22.....			660	340	230	600	480	1,130	1,730	2,070	1,280	371	258
23.....			600	332	230	600	480	1,040	2,070	1,730	1,170	371	258
24.....			570	300	230	510	430	880	2,300	1,390	1,170	371	258
25.....			540	300	230	480	430	880	1,840	1,280	960	371	258
26.....			510	300	230	480	695	880	1,500	1,170	960	371	258
27.....			480	300	230	480	380	960	1,500	1,280	862	331	258
28.....			470	280	230	380	380	960	1,500	1,280	772	414	258
29.....			455	260	230	380	600	960	1,500	1,500	693	414	258
30.....			470	230	230	.....	600	880	1,730	1,620	626	414	258
31.....			245	245	.....	.....	480	.....	1,170	.....	331	414	.....

Daily discharge, in second-feet, of Wallowa River near Wallowa, Oreg., for 1903-1907—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	258	293	293	331	226	293	331	512	1,960	772	276	200
2.....	258	293	293	293	258	293	331	512	1,960	772	276	200
3.....	258	293	258	293	258	331	331	567	2,070	772	276	200
4.....	258	293	226	258	258	331	331	567	2,070	772	276	200
5.....	258	293	226	258	258	331	331	567	1,840	772	276	200
6.....	331	293	226	258	258	331	371	567	1,730	772	236	200
7.....	331	293	226	258	258	331	371	626	1,620	772	236	200
8.....	293	293	226	258	258	331	461	693	1,730	568	236	200
9.....	293	293	258	258	226	331	461	772	2,300	568	200	200
10.....	293	293	226	258	226	331	461	414	2,070	568	200	200
11.....	293	293	258	226	174	331	414	626	2,070	462	200	200
12.....	331	293	258	258	174	331	414	567	2,070	462	200	200
13.....	331	293	258	414	174	331	414	567	1,960	462	200	200
14.....	331	293	258	258	174	371	371	567	1,840	462	200	200
15.....	371	293	258	258	174	371	371	512	1,620	412	168	200
16.....	371	293	258	258	174	371	371	567	1,960	412	168	236
17.....	371	293	258	258	174	371	371	960	1,730	412	200	236
18.....	331	293	258	258	174	371	331	862	960	318	200	236
19.....	331	293	258	258	226	371	371	862	960	318	200	200
20.....	331	293	258	258	293	371	371	960	1,060	318	200	200
21.....	331	293	258	258	331	371	414	772	1,060	276	200	200
22.....	331	293	258	258	331	371	414	693	1,060	236	200	200
23.....	331	293	258	258	331	331	461	626	1,060	236	200	200
24.....	331	293	258	293	331	331	512	567	1,170	236	200	200
25.....	331	293	258	461	331	331	567	567	1,060	236	200	200
26.....	293	293	258	331	331	371	772	626	960	276	200	200
27.....	293	293	258	331	331	371	693	862	862	276	200	276
28.....	293	331	258	331	331	331	567	960	772	236	200	341
29.....	293	293	258	293	.....	331	512	960	693	276	200	318
30.....	293	293	371	293	.....	331	567	1,170	862	276	200	318
31.....	293	.....	371	258	.....	331	.....	1,500	.....	276	200	.....
1905-6.												
1.....	318	318	256	205	225	285	710	790	980	980	285	285
2.....	276	318	256	245	205	245	580	880	1,080	1,080	285	285
3.....	276	318	256	245	205	285	580	980	1,080	1,180	285	285
4.....	276	297	276	225	187	285	525	1,290	1,290	1,180	285	285
5.....	256	297	276	225	205	285	525	980	1,180	1,290	245	245
6.....	256	297	276	245	170	285	580	980	1,080	1,180	245	245
7.....	318	297	276	205	245	285	640	880	980	1,180	245	245
8.....	318	297	276	205	330	307	640	880	880	1,180	245	245
9.....	318	297	218	245	425	330	710	980	880	1,080	245	285
10.....	318	297	200	245	330	375	710	1,180	980	980	205	285
11.....	318	276	200	225	375	330	580	1,400	1,290	790	205	285
12.....	318	276	318	225	245	285	580	1,510	1,840	710	245	285
13.....	318	276	514	245	285	245	525	1,080	1,730	710	285	245
14.....	318	276	514	245	245	285	525	1,080	1,400	710	285	330
15.....	341	276	514	205	245	285	525	980	1,400	640	285	330
16.....	364	256	318	225	245	205	640	790	1,840	640	245	285
17.....	318	256	236	245	245	205	710	710	1,510	580	245	285
18.....	318	297	236	245	245	245	710	640	1,180	525	245	285
19.....	318	297	236	245	330	285	640	580	1,180	525	245	285
20.....	318	297	236	245	285	245	710	640	1,180	525	245	285
21.....	318	276	236	245	330	285	880	640	1,180	525	245	245
22.....	318	256	236	245	330	285	1,080	790	1,080	375	245	245
23.....	318	236	236	245	330	330	1,180	710	1,180	375	245	245
24.....	318	236	236	245	285	425	980	710	1,080	330	245	245
25.....	341	256	256	245	285	525	880	710	1,080	330	285	245
26.....	364	318	236	245	285	525	720	880	1,180	285	245	245
27.....	341	318	236	205	285	640	790	880	1,400	285	245	245
28.....	341	276	236	225	285	640	790	880	1,290	285	245	245
29.....	341	276	236	225	.....	580	790	880	980	285	245	245
30.....	318	276	236	225	.....	710	790	980	880	285	285	225
31.....	318	.....	236	225	.....	710	.....	980	.....	285	285	.....

Daily discharge, in second-feet, of Wallowa River near Wallowa, Oreg., for 1903-1907—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.							1906-7.						
1.....	205	330	515	515	410	570	16.....	285	1,840	410	325	570	410
2.....	205	285	515	460	460	570	17.....	330	1,330	410	410	570	410
3.....	205	330	460	460	460	515	18.....	285	1,150	410	460	570	460
4.....	205	330	460	570	410	515	19.....	285	980	460	410	570	570
5.....	205	375	460	515	630	515	20.....	285	980	570	410	630	690
6.....	205	375	460	410	1,420	515	21.....	285	900	570	365	630	830
7.....	205	375	460	365	900	515	22.....	285	830	570	365	630	830
8.....	205	640	515	325	760	460	23.....	285	760	570	365	630	760
9.....	245	640	515	410	690	460	24.....	285	690	570	365	630	690
10.....	245	640	460	515	690	460	25.....	285	690	630	365	690	630
11.....	245	710	515	570	630	460	26.....	285	630	760	365	760	630
12.....	245	640	515	460	570	460	27.....	285	570	690	365	690	570
13.....	245	1,510	515	365	570	460	28.....	375	570	690	410	630	570
14.....	245	3,100	460	285	570	460	29.....	375	570	690	410	.....	570
15.....	285	2,960	410	325	570	410	30.....	330	570	630	410	.....	515
							31.....	330	.....	570	410	.....	515

NOTE.—Daily discharge determined as follows: 1903 to 1905. Nov. 14, 1903, to May 23, 1904, from rating curve fairly well defined; May 24, 1904, to May 31, 1905, from curve well defined between 250 and 1,200 second-feet; estimated, on account of ice, Feb. 13-18, 1905; June 1 to Dec. 31, 1905, from fairly well defined curve. 1906 and 1907. Jan. 1 to Nov. 14, 1906, from curve well defined below 1,200 second-feet; Nov. 15, 1906, to Mar. 31, 1907, from poorly defined curve.

Monthly discharge of Wallowa River near Wallowa, Oreg., for 1903-1907.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
Nov. 14-30.....	660	324	454	15,300	B.
December.....	570	230	363	22,300	B.
January.....	300	230	260	16,000	C.
February.....	660	200	329	18,900	B.
March.....	1,790	320	588	36,200	B.
April.....	1,840	480	996	59,300	B.
May.....	2,300	800	1,220	75,000	B.
June.....	2,300	1,170	1,680	100,000	B.
July.....	2,300	331	1,470	90,600	B.
August.....	461	331	397	24,400	B.
September.....	371	258	303	18,000	B.
The period.....				476,000	
1904-5.					
October.....	371	258	311	19,100	B.
November.....	331	293	294	17,500	B.
December.....	371	226	261	16,000	B.
January.....	461	226	283	17,400	C.
February.....	331	174	252	14,000	C.
March.....	371	293	343	21,100	B.
April.....	772	331	435	25,900	B.
May.....	1,500	414	715	44,000	B.
June.....	2,300	693	1,500	89,600	B.
July.....	772	236	451	27,700	B.
August.....	276	168	214	13,200	B.
September.....	341	200	219	13,000	B.
The year.....	2,300	168	440	318,000	
1905-6.					
October.....	364	256	317	19,500	B.
November.....	318	236	285	17,000	B.
December.....	514	200	274	16,800	B.
January.....	245	205	233	14,300	C.
February.....	425	170	275	15,300	C.
March.....	710	205	363	22,300	B.
April.....	1,180	525	707	42,100	B.
May.....	1,510	580	912	56,100	B.
June.....	1,840	880	1,210	72,000	B.
July.....	1,290	285	687	42,200	B.
August.....	205	255	255	15,700	B.
September.....	330	225	267	15,900	B.
The year.....	1,840	170	482	349,000	

Monthly discharge of Company ditch near Wallowa, Oreg., for 1905.

Month.	Mean discharge in second-feet.	Total (in acre-feet).
May 10-31.....	25.0	1,090
June.....	35.0	2,080
July.....	11.5	707
August.....	5.55	341
September.....	5.90	351
October.....	8.87	545
November.....	7.93	472
December.....	7.32	450
The period.....		6,010

NOTE.—Discharge estimated between May 10 and September 15.

WALLOWA RIVER AT MINAM,¹ OREG.

Location.—In sec. 29, T. 2 N., R. 41 E., 1,000 feet below new county highway bridge at Minam, and about same distance below mouth of Minam River; 12 miles north-east of Elgin, and 9 miles below Wallowa Valley.

Records presented.—November 18, 1903, to September 28, 1907; November 16, 1908, to September 30, 1910.

Drainage area.—870 square miles.

Gage.—Staff; upper section vertical; lower section inclined.

Channel.—Gravel and bowlders; fairly permanent.

Discharge measurements.—Made from highway bridge at gage until October, 1905; from new bridge 1,000 feet upstream since that time.

Winter flow.—Materially affected by ice and ice jams during very cold weather.

Diversions.—Many ditches divert water from Wallowa River and its western tributaries for irrigation in the Wallowa Valley above the station.

Accuracy.—Results good except for ice periods and extreme high stages.

Discharge measurements of Wallowa River at Minam, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 18	J. H. Lewis.....	2.60	540	May 21	R. S. Hall.....	3.60	1,580
1904.				June 28	.....do.....	4.14	2,480
July 20	W. C. Sawyer.....	3.70	1,660	Dec. 9	Stevens and McGlashan.	2.90	777
Aug. 20	.....do.....	2.65	568	1907.			
Sept. 27	.....do.....	2.35	416	May 2	I. E. Oakes.....	3.50	1,520
1905.				1908.			
Apr. 1	W. C. Sawyer.....	2.85	800	June 3	H. D. McGlashan....	3.42	1,370
May 20	.....do.....	3.86	1,850	Oct. 18	L. R. Allen.....	2.83	684
July 7	.....do.....	3.27	1,110	1909.			
Sept. 16	.....do.....	2.18	298	Oct. 16	F. F. Henshaw.....	2.55	433
Nov. 30	R. S. Hall.....	2.34	358	1910.			
				Sept. 14	F. C. Ebert.....	2.32	317

¹ Referred to in earlier reports as near Elgin, Oreg.

Daily gage height, in feet, of Willouwa River at Minam, Oreg., for 1903-1907, 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1			3.0	2.5	2.3	2.9	3.3	3.8	4.8	5.0	3.0	2.6
2			3.0	2.6	2.3	2.9	3.4	3.8	5.0	4.8	3.0	2.6
3			3.0	2.6	2.3	2.8	3.6	3.8	4.8	4.8	3.0	2.5
4			3.0	2.6	2.4	2.8	3.7	4.0	4.7	4.8	3.0	2.5
5			3.0	2.5	2.6	2.8	3.8	3.9	4.8	4.7	2.9	2.5
6			3.0	2.5	2.5	2.9	4.3	3.8	5.1	4.7	2.9	2.5
7			2.9	2.5	2.5	3.7	3.9	3.8	5.0	4.6	2.9	2.5
8			2.8	2.5	2.4	5.0	3.8	3.8	4.9	4.6	2.9	2.4
9			2.8	2.6	2.4	4.4	4.0	3.8	4.8	4.6	2.8	2.4
10			2.8	2.6	2.5	3.9	4.4	3.9	4.7	4.5	2.8	2.4
11			2.8	2.6	2.5	3.8	4.8	4.0	4.5	4.4	2.8	2.4
12			2.8	2.7	2.6	3.6	4.8	4.0	4.5	4.4	2.8	2.4
13			2.7	2.7	2.6	3.4	5.0	4.1	4.5	4.3	2.7	2.4
14			2.7	2.7	2.6	3.4	5.2	4.2	4.5	4.1	2.7	2.4
15			2.7	2.7	2.6	3.7	5.2	4.2	4.8	4.1	2.7	2.4
16			2.7	2.7	2.7	3.4	5.2	4.2	5.0	4.0	2.7	2.4
17		2.6	2.8	2.7	2.7	3.4	4.8	4.3	5.0	3.8	2.7	2.3
18		2.6	2.8	2.7	2.5	3.4	4.6	4.5	5.2	3.7	2.7	2.3
19		2.7	2.8	2.7	2.7	3.4	4.6	4.5	5.0	3.7	2.7	2.3
20		2.8	2.8	2.3	2.6	3.5	4.6	4.4	4.8	3.7	2.6	2.3
21		3.0	2.8	2.4	2.6	3.3	4.6	4.6	4.7	3.7	2.6	2.3
22		3.8	2.7	2.5	3.0	3.2	4.2	5.0	4.7	3.8	2.6	2.3
23		3.5	2.7	2.5	3.5	3.2	4.1	5.3	4.6	3.8	2.6	2.3
24		3.4	2.7	2.4	3.9	3.2	3.9	5.4	4.3	3.8	2.6	2.3
25		3.4	2.6	2.4	3.0	3.2	3.8	5.0	4.3	3.7	2.6	2.3
26		3.4	2.5	2.3	3.0	2.9	3.8	4.6	4.3	3.6	2.5	2.3
27		3.3	2.5	2.3	3.3	2.9	3.9	4.6	4.3	3.5	2.6	2.3
28		3.2	2.5	2.3	3.0	2.9	4.0	4.6	4.3	3.5	2.7	2.3
29		3.0	2.5	2.3	3.0	3.4	4.0	4.7	4.5	3.3	2.7	2.3
30		3.0	2.5	2.3		3.6	3.9	4.8	4.6	3.2	2.6	2.3
31			2.5	2.3		3.4		4.8		3.1	2.6	
1904-5.												
1	2.3	2.3	2.3	2.5	2.4	2.7	2.9	3.2	4.9	3.3	2.4	2.0
2	2.3	2.3	2.3	2.5	2.4	2.7	2.9	3.2	5.0	3.5	2.4	2.0
3	2.3	2.3	2.3	2.5	2.4	2.8	2.9	3.3	5.0	3.5	2.4	2.0
4	2.3	2.3	2.3	2.3	2.4	2.8	2.9	3.3	4.9	3.5	2.4	2.0
5	2.3	2.3	2.3	2.3	2.3	2.8	3.0	3.5	4.7	3.5	2.4	2.0
6	2.3	2.3	2.3	2.3	2.3	2.8	3.0	3.5	4.4	3.4	2.3	2.0
7	2.4	2.3	2.3	2.3	2.3	2.8	3.1	3.6	4.4	3.4	2.3	2.0
8	2.5	2.3	2.3	2.2	2.2	2.7	3.1	3.7	4.6	3.3	2.3	2.0
9	2.4	2.3	2.3	2.2	2.1	2.7	3.1	3.7	5.0	3.2	2.3	2.0
10	2.4	2.3	2.3	2.1	2.0	2.7	3.1	3.6	4.9	3.2	2.3	2.0
11	2.4	2.3	2.3	2.1	2.0	2.7	3.0	3.5	4.9	3.1	2.3	2.0
12	2.6	2.3	2.3	2.2	2.0	2.7	3.0	3.4	4.8	2.9	2.3	2.0
13	2.5	2.3	2.3	2.3	2.0	2.7	3.0	3.3	4.6	2.8	2.2	2.0
14	2.5	2.3	2.3	2.3	2.2	2.9	2.9	3.3	4.4	2.6	2.1	2.0
15	2.6	2.3	2.3	2.4	2.2	2.9	2.9	3.3	4.2	2.7	2.1	2.0
16	2.6	2.3	2.3	2.4	2.3	2.9	2.9	3.4	3.6	2.6	2.1	2.0
17	2.5	2.3	2.3	2.4	2.4	2.8	2.9	3.9	3.5	2.6	2.1	2.2
18	2.5	2.3	2.3	2.4	2.6	2.8	2.8	3.8	3.8	2.5	2.1	2.2
19	2.5	2.3	2.3	2.4	2.5	2.8	2.8	3.8	3.8	2.5	2.1	2.2
20	2.4	2.3	2.3	2.3	2.5	2.8	2.9	4.0	3.9	2.5	2.0	2.2
21	2.4	2.3	2.3	2.3	2.5	2.8	2.9	3.7	4.0	2.5	2.0	2.2
22	2.4	2.3	2.3	2.3	2.5	2.8	3.0	3.6	4.1	2.5	2.0	2.2
23	2.4	2.3	2.3	2.3	2.5	2.8	3.2	3.5	3.9	2.5	2.0	2.2
24	2.4	2.3	2.3	2.4	2.6	2.8	3.3	3.4	4.0	2.5	2.0	2.2
25	2.4	2.3	2.3	2.8	2.7	2.8	3.4	3.3	3.8	2.5	2.0	2.2
26	2.4	2.3	2.3	2.6	2.7	2.8	3.7	3.4	3.7	2.5	2.0	2.2
27	2.4	2.3	2.3	2.6	2.7	2.9	3.5	3.8	3.6	2.5	2.0	2.25
28	2.3	2.4	2.3	2.6	2.7	2.9	3.3	3.8	3.5	2.5	2.0	2.5
29	2.3	2.3	2.3	2.5		2.9	3.2	3.9	3.4	2.4	2.0	2.6
30	2.3	2.3	2.3	2.4		2.9	3.3	4.2	3.3	2.4	2.0	2.45
31	2.3		2.5	2.4		2.9		4.9		2.4	2.0	

Daily gage height, in feet, of Willowa River at Minam, Oreg., for 1903-1907, 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	2.45	2.5	2.3	2.25	2.25	2.6	2.8	.....	4.0	3.9	2.5	2.3
2.....	2.4	2.6	2.3	2.3	2.3	2.5	2.6	.....	4.0	4.0	2.5	2.3
3.....	2.4	2.6	2.3	2.3	2.3	2.5	3.8	.....	4.15	4.0	2.45	2.3
4.....	2.35	2.6	2.3	2.25	2.3	2.5	3.8	.....	4.5	4.1	2.45	2.3
5.....	2.35	2.55	2.3	2.2	2.25	2.5	3.3	.....	4.3	4.1	2.45	2.3
6.....	2.35	2.5	2.3	2.2	2.25	2.5	3.3	.....	4.1	4.0	2.45	2.3
7.....	2.6	2.5	2.3	2.2	2.25	2.55	3.6	.....	4.0	4.0	2.4	2.3
8.....	2.55	2.5	2.3	2.2	2.2	2.65	3.5	.....	3.9	4.0	2.35	2.3
9.....	2.55	2.5	2.3	2.3	2.2	2.8	3.4	.....	3.9	3.8	2.35	2.3
10.....	2.5	2.5	2.05	2.3	2.25	2.9	3.3	.....	4.0	3.7	2.35	2.3
11.....	2.55	2.45	2.05	2.3	2.3	2.8	3.3	.....	4.38	3.6	2.35	2.3
12.....	2.6	2.45	2.1	2.35	2.3	2.65	3.3	.....	4.75	3.6	2.35	2.3
13.....	2.6	2.45	2.1	2.25	2.3	2.45	3.3	.....	4.6	3.4	2.35	2.4
14.....	2.6	2.4	2.1	2.2	2.4	2.5	3.3	.....	4.4	3.3	2.35	2.4
15.....	2.7	2.4	2.15	2.2	2.4	2.55	3.3	.....	4.4	3.3	2.35	2.4
16.....	2.65	2.4	2.15	2.2	2.35	2.65	3.3	.....	4.8	3.2	2.35	2.35
17.....	2.7	2.4	2.2	2.2	2.35	2.6	3.4	.....	4.7	3.1	2.35	2.35
18.....	2.6	2.4	2.2	2.2	2.4	2.3	3.4	.....	4.4	3.1	2.35	2.35
19.....	2.6	2.45	2.2	2.2	2.7	2.45	3.5	.....	4.2	3.0	2.3	2.35
20.....	2.6	2.5	2.3	2.3	2.7	2.45	3.6	3.6	4.15	2.95	2.3	2.35
21.....	2.6	2.5	2.4	2.2	2.8	2.5	3.8	3.6	4.25	2.9	2.3	2.3
22.....	2.55	2.5	2.3	2.2	2.8	2.6	3.8	3.75	4.1	2.85	2.3	2.3
23.....	2.6	2.35	2.35	2.2	2.7	2.6	3.8	3.65	3.9	2.8	2.3	2.3
24.....	2.65	2.35	2.3	2.3	2.7	2.9	4.2	3.6	3.9	.....	2.4	2.3
25.....	2.65	2.4	2.4	2.3	2.7	3.4	4.2	3.65	4.0	2.7	2.35	2.3
26.....	2.8	2.4	2.5	2.3	2.7	3.4	4.0	3.95	4.1	2.6	2.35	2.3
27.....	2.7	2.35	2.6	2.25	2.7	3.7	3.8	3.9	4.4	2.55	2.3	2.3
28.....	2.6	2.3	2.4	2.3	2.8	3.4	3.6	3.8	4.4	2.55	2.3	2.3
29.....	2.6	2.3	2.4	2.3	.....	3.5	.....	3.85	3.9	2.55	2.3	2.3
30.....	2.6	2.3	2.4	2.3	.....	3.65	.....	4.0	3.8	2.55	2.3	2.25
31.....	2.55	.....	2.85	2.25	.....	3.75	.....	4.05	.....	2.5	2.3	.....
1906-7.												
1.....	2.25	2.45	2.7	3.3	.....	3.4	3.2	3.3	4.5	4.0	3.2	2.4
2.....	2.25	2.4	2.65	3.2	.....	3.3	3.2	3.2	4.4	4.3	3.3	2.4
3.....	.....	2.4	2.65	3.35	.....	3.3	3.3	3.2	5.2	4.1	3.4	2.4
4.....	.....	2.45	2.6	3.45	.....	3.25	3.4	3.1	5.0	4.2	3.3	2.4
5.....	.....	2.5	2.6	3.35	4.5	3.2	3.4	3.1	5.0	4.2	3.3	2.4
6.....	2.25	2.45	2.6	3.3	4.2	3.15	3.5	3.0	4.8	4.1	3.2	2.4
7.....	2.25	2.55	2.85	3.25	3.9	3.1	3.7	3.5	4.7	4.1	2.9	2.3
8.....	2.25	3.3	2.85	3.2	3.6	3.1	3.8	4.0	4.5	4.0	2.9	2.3
9.....	2.25	3.1	2.9	3.15	3.6	3.1	4.0	4.2	4.45	3.9	2.8	2.3
10.....	2.25	3.1	2.9	3.1	3.6	3.1	4.2	4.25	4.2	3.9	2.9	2.6
11.....	2.25	3.2	2.95	3.0	3.55	3.3	4.0	4.3	5.0	3.8	2.8	2.5
12.....	2.3	3.1	3.0	3.0	3.5	3.2	4.1	4.2	4.0	3.7	2.8	2.4
13.....	2.3	4.5	3.0	2.95	3.4	3.2	4.2	4.2	4.2	3.7	2.8	2.4
14.....	2.3	5.52	2.95	2.95	3.4	3.1	4.2	4.1	4.4	3.6	2.8	2.3
15.....	2.3	5.45	2.95	7.7	3.5	3.0	4.2	4.0	4.2	3.5	2.8	2.7
16.....	2.35	4.4	2.95	8.3	3.6	3.0	4.2	4.5	4.0	3.5	2.7	2.5
17.....	2.4	4.1	2.9	8.4	3.6	2.9	4.0	4.8	4.1	3.4	2.7	2.5
18.....	2.4	3.7	2.95	6.0	3.5	2.9	3.9	4.8	4.1	3.5	2.6	2.5
19.....	2.35	3.5	2.95	4.4	3.5	3.0	3.7	4.75	4.5	3.6	2.6	2.4
20.....	2.35	3.45	3.4	4.35	3.4	3.2	3.7	4.7	4.4	3.5	2.6	2.4
21.....	2.35	3.45	3.7	4.3	3.5	4.5	3.65	4.6	4.2	3.4	2.5	2.5
22.....	2.3	3.35	3.4	4.3	3.5	3.9	3.6	4.5	4.6	3.3	2.5	2.3
23.....	2.3	3.3	3.35	4.3	3.6	3.8	3.6	4.4	4.5	3.2	2.5	2.4
24.....	2.3	3.25	3.3	4.3	3.6	3.6	3.5	4.3	4.3	3.3	2.4	2.5
25.....	2.3	3.2	3.3	4.25	3.7	3.5	3.5	4.4	4.4	3.3	2.3	2.4
26.....	2.3	3.2	3.9	4.25	3.8	3.4	3.45	4.35	4.5	3.3	2.4	2.1
27.....	2.7	3.1	3.6	8.2	3.5	3.3	3.45	4.3	4.6	3.3	2.4	2.2
28.....	2.55	3.1	3.55	.....	3.5	3.3	3.4	4.5	4.9	3.2	2.3	2.2
29.....	2.5	3.0	3.5	.....	.....	3.2	3.4	4.5	4.5	3.4	2.4	.....
30.....	2.5	2.9	3.4	.....	.....	3.1	3.35	4.5	4.4	3.5	2.4	.....
31.....	2.45	.....	3.3	.....	.....	3.1	.....	4.7	.....	3.6	2.5	.....

Daily gage height, in feet, of Wallowa River at Minam, Oreg., for 1903-1907, 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1			2.5	2.4	2.9	2.9	3.3	3.4	4.9	4.7	3.2	2.5
2			2.5	2.4	2.8	3.0	3.3	3.5	5.6	4.5	3.2	2.5
3			2.6	2.5	2.7	3.0	3.3	3.9	5.8	4.6	3.2	2.5
4			2.6	2.7	2.7	3.1	3.2	4.3	5.7	4.6	3.1	2.6
5			2.6	2.6	2.7	3.0	3.2	4.2	5.6	4.6	3.1	2.6
6			2.6	2.5	2.7	3.1	3.1	4.0	5.5	4.2	3.0	2.6
7			2.5	2.6	2.7	2.9	3.0	4.0	5.1	4.0	2.9	2.6
8			2.5	2.6	2.7	2.9	3.0	3.9	4.9	3.8	2.9	2.6
9			2.6	2.6	2.7	2.9	3.1	4.0	4.5	3.9	2.8	2.6
10			2.5	5.1	2.7	2.9	3.2	4.0	4.5	3.9	2.8	2.7
11			2.5	4.5	2.7	2.9	3.1	3.8	4.4	4.0	2.8	2.7
12			2.6	3.2	2.6	2.8	3.1	3.7	4.4	3.9	2.7	2.7
13			2.6	3.2	2.8	2.8	3.2	3.5	5.1	3.8	2.7	2.6
14			2.5	3.1	2.7	3.0	3.1	3.5	5.2	3.7	2.7	2.6
15			2.5	3.2	2.6	3.0	3.2	3.6	5.2	3.7	2.7	2.7
16		2.6	2.5	3.6	2.6	3.1	3.3	3.7	5.2	3.6	2.7	2.7
17		2.6	2.5	3.6	3.5	3.5	3.4	3.7	5.2	3.6	2.7	2.7
18		2.6	2.5	3.2	3.1	3.1	3.3	3.6	5.0	3.5	2.7	2.6
19		2.6	2.5	3.3	3.0	3.1	3.4	3.6	5.0	3.4	2.6	2.5
20		2.6	2.4	3.9	2.8	3.1	3.4	3.9	5.2	3.3	2.6	2.5
21		2.7	2.4	3.6	2.7	3.0	3.3	4.0	5.0	3.3	2.6	2.6
22		2.7	2.4	3.6	2.6	3.0	3.3	3.8	4.7	3.2	2.6	2.6
23		2.7	2.5	3.3	2.6	2.9	3.4	3.7	4.7	3.2	2.6	2.6
24		2.7	2.5	3.1	2.7	3.1	3.3	3.6	4.5	3.2	2.6	2.5
25		2.7	2.5	3.1	2.7	3.2	3.4	3.8	4.5	3.0	2.6	2.5
26		2.6	2.5	2.8	2.7	3.2	3.6	4.3	4.4	3.0	2.5	2.5
27		2.5	2.5	2.8	2.7	3.3	3.7	4.5	4.3	3.2	2.5	2.5
28		2.5	2.5	2.8	2.8	3.3	3.7	4.8	4.4	4.0	2.5	2.5
29		2.5	2.4	2.8		3.3	3.5	4.5	4.5	3.5	2.5	2.5
30		2.6	2.4	2.9		3.2	3.5	4.4	4.7	3.3	2.5	2.7
31			2.4	2.9		3.2		4.4		3.3	2.5	
1909-10.												
1	2.7	2.55	3.2	2.7	2.8	4.8	3.7	4.25	4.9	3.2	2.4	2.35
2	2.6	2.55	3.15	2.7	2.8	5.7	3.7	4.1	4.85	3.2	2.4	2.35
3	2.6	2.7	3.1	2.7	2.8	5.1	3.8	4.25	4.6	3.15	2.4	2.3
4	2.6	2.8	2.9	2.7	2.8	4.7	3.7	4.2	4.2	3.1	2.4	2.3
5	2.6	2.8	2.9	2.8	2.75	4.6	3.7	4.0	4.1	3.05	2.4	2.3
6	2.6	2.8	2.9		2.75	4.1	3.85	3.95	4.2	3.0	2.4	2.3
7	2.8	2.7	2.85		2.8	3.9	3.9	4.05	4.0	2.95	2.4	2.3
8	2.7	2.75	2.9		2.8	3.8	4.0	4.3	3.8	2.9	2.4	2.3
9	2.7	2.75	2.9		2.8	3.8	4.25	4.6	3.9	2.9	2.4	2.3
10	2.7	2.75	2.9		2.8	3.8	4.45	5.2	3.7	2.85	2.35	2.3
11	2.6	2.8	2.9		2.8	3.75	4.75	5.1	3.95	2.85	2.35	2.35
12	2.6	2.75	2.85		2.8	3.9	4.8	4.8	4.1	2.8	2.35	2.35
13	2.6	2.7	2.75		2.8	3.95	4.6	4.9	3.7	2.8	2.3	2.35
14	2.6	2.7	2.7		2.85	4.1	4.4	4.85	3.7	2.75	2.3	2.35
15	2.6	2.7	2.9		2.85	4.2	4.2	4.55	3.7	2.7	2.3	2.35
16	2.6	2.6	2.8		2.8	4.2	4.1	4.55	3.8	2.75	2.35	2.4
17	2.5	2.7	3.0		2.85	4.25	4.1	4.5	3.7	2.7	2.3	2.7
18	2.5	2.8	3.0		2.8	4.35	4.2	4.45	3.6	2.7	2.3	2.5
19	2.5	3.0	2.8		2.8	4.5	4.5	4.6	3.5	2.7	2.3	2.45
20	2.5	3.25	2.8		2.8	4.7	4.85	4.4	3.4	2.65	2.3	2.4
21	2.5	3.0	2.8		2.8	5.3	4.65	4.35	3.4	2.65	2.3	2.4
22	2.5	3.3	2.9		2.85	5.0	4.5	4.4	3.4	2.55	2.3	2.7
23	2.5	4.0	6.75	2.7	2.85	5.2	4.6	4.6	3.4	2.65	2.3	2.5
24	2.5	4.4	2.8	2.8	2.85	4.7	4.8	4.6	3.35	2.65	2.3	2.45
25	2.5	3.9	2.85	2.8	2.85	4.4	5.1	4.8	3.3	2.6	2.3	2.4
26	2.5	3.5	2.8	2.8	2.85	4.2	5.3	4.5	3.3	2.5	2.3	2.4
27	2.5	3.45	2.9	2.7	2.85	4.05	5.0	4.5	3.3	2.5	2.3	2.4
28	2.5	3.3	2.8	2.7	3.0	3.9	4.9	4.2	3.3	2.5	2.3	2.4
29	2.5	3.2	2.7	2.7		3.75	4.6	4.2	3.25	2.5	2.3	2.4
30	2.5	3.2	2.7	2.8		3.6	4.4	4.4	3.25	2.5	2.3	2.4
31	2.5		3.0	2.8		3.9		4.5		2.45	2.3	

NOTE.—Ice present Jan. 4 to Feb. 5, 1907, part of January, 1909, and Dec. 23, 1909, to Mar. 3, 1910.

Daily discharge, in second-feet, of Willowa River at Minam, Oreg., for 1903-1907,
1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1			834	488	386	750	1,140	1,800	3,220	3,510	834	545
2			834	545	386	750	1,260	1,800	3,510	3,220	834	545
3			834	545	386	674	1,520	1,800	3,220	3,220	834	488
4			834	545	435	674	1,660	2,090	3,080	3,220	834	488
5			834	488	545	674	1,800	1,950	3,220	3,080	750	488
6			834	488	488	750	2,510	1,800	3,650	3,080	750	488
7			750	488	488	1,660	1,950	1,800	3,510	2,940	750	488
8			674	488	435	3,510	1,800	1,800	3,370	2,940	750	435
9			674	545	435	2,660	2,060	1,800	3,220	2,940	674	435
10			674	545	488	1,950	2,660	1,950	3,080	2,800	674	435
11			674	545	488	1,800	3,220	2,090	2,800	2,660	674	435
12			674	606	545	1,520	3,220	2,090	2,800	2,660	674	435
13			606	606	545	1,260	3,510	2,230	2,800	2,510	606	435
14			606	606	545	1,260	3,790	2,370	2,800	2,230	606	435
15			606	606	545	1,660	3,790	2,370	3,220	2,230	606	435
16			606	606	606	1,260	3,790	2,370	3,510	2,090	606	435
17		545	674	606	606	1,260	3,220	2,510	3,510	1,800	606	386
18		545	674	606	488	1,260	2,940	2,800	3,790	1,660	606	386
19		606	674	606	606	1,260	2,940	2,800	3,510	1,660	606	386
20		674	674	386	545	1,380	2,940	2,660	3,220	1,660	545	386
21		834	674	435	545	1,140	2,940	2,940	3,080	1,660	545	386
22		1,800	606	488	834	1,030	2,370	3,510	3,080	1,800	545	386
23		1,380	606	488	1,380	1,030	2,230	3,930	2,940	1,800	545	386
24		1,260	606	435	1,950	1,030	1,950	4,080	2,510	1,800	545	386
25		1,260	545	435	834	1,030	1,800	3,510	2,510	1,660	545	386
26		1,260	488	386	834	750	1,800	2,940	2,510	1,520	488	386
27		1,140	488	386	1,140	750	1,950	2,940	2,510	1,380	545	386
28		1,030	488	386	834	750	2,060	2,940	2,510	1,380	606	386
29		834	488	386	834	1,260	2,090	3,080	2,800	1,140	606	386
30		834	488	386		1,520	1,950	3,220	2,940	1,030	545	386
31			488	386		1,260		3,220		926	545	
1904-5.												
1	386	386	386	465	405	600	770	1,080	3,480	1,190	405	215
2	386	386	386	465	405	600	770	1,080	3,650	1,430	405	215
3	386	386	386	465	405	680	770	1,190	3,650	1,430	405	215
4	386	386	386	350	405	680	770	1,190	3,480	1,430	405	215
5	386	386	386	350	350	680	870	1,430	3,150	1,430	405	215
6	386	386	386	350	350	680	870	1,430	2,670	1,310	350	215
7	435	386	386	350	350	680	970	1,550	2,670	1,310	350	215
8	488	386	386	300	300	600	970	1,680	2,990	1,190	350	215
9	435	386	386	300	255	600	970	1,680	3,650	1,080	350	215
10	435	386	386	255	215	600	970	1,550	3,480	1,080	350	215
11	435	386	386	255	215	600	870	1,430	3,480	970	350	215
12	545	386	386	300	215	600	870	1,310	3,310	770	350	215
13	488	386	386	350	215	600	870	1,190	2,990	680	300	215
14	488	386	386	350	300	770	770	1,190	2,670	530	255	215
15	545	386	386	405	300	770	770	1,190	2,370	600	255	215
16	545	386	386	405	350	770	770	1,310	1,550	530	255	215
17	488	386	386	405	405	680	770	1,940	1,430	530	255	300
18	488	386	386	405	530	680	680	1,810	1,810	465	255	300
19	488	386	386	405	465	680	680	1,810	1,810	465	255	300
20	435	386	386	350	465	680	770	2,080	1,940	465	215	300
21	435	386	386	350	465	680	770	1,680	2,080	465	215	300
22	435	386	386	350	465	680	870	1,550	2,220	465	215	300
23	435	386	386	350	465	680	1,080	1,430	1,940	465	215	300
24	435	386	386	405	530	680	1,190	1,310	2,080	465	215	300
25	435	386	386	680	600	680	1,310	1,190	1,810	465	215	300
26	435	386	386	530	600	680	1,680	1,310	1,680	465	215	300
27	435	386	386	530	600	770	1,430	1,810	1,550	465	215	325
28	386	435	386	530	600	770	1,190	1,810	1,430	465	215	465
29	386	386	386	465		770	1,080	1,940	1,310	405	215	530
30	386	386	386	405		770	1,190	2,370	1,190	405	215	435
31	386		488	405		770		3,480		405	215	

*Daily discharge, in second-feet, of Willowa River at Minam, Oreg., for 1903-1907,
1908-1910—Continued.*

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	435	465	350	325	325	540	695	.....	2,220	2,060	470	350
2.....	405	530	350	350	350	470	540	.....	2,220	2,220	470	350
3.....	405	530	350	350	350	470	1,900	.....	2,470	2,220	438	350
4.....	378	530	350	325	350	470	1,900	.....	3,100	2,380	438	350
5.....	378	498	350	300	325	470	1,200	.....	2,730	2,380	438	350
6.....	378	465	350	300	325	470	1,200	.....	2,380	2,220	438	350
7.....	530	465	350	300	325	505	1,610	.....	2,220	2,220	405	350
8.....	498	465	350	300	300	578	1,470	.....	2,060	2,220	378	350
9.....	498	465	350	350	300	695	1,330	.....	2,060	1,000	378	350
10.....	465	465	235	350	325	780	1,200	.....	2,220	1,760	378	350
11.....	498	435	235	350	350	695	1,200	.....	2,370	1,610	378	350
12.....	530	435	255	378	350	578	1,200	.....	3,000	1,610	378	350
13.....	530	435	255	325	350	438	1,200	.....	3,300	1,330	378	405
14.....	530	405	255	300	405	470	1,200	.....	2,910	1,200	378	405
15.....	600	405	278	300	405	505	1,200	.....	2,910	1,200	378	405
16.....	565	405	278	300	378	578	1,200	.....	3,700	1,080	378	378
17.....	600	405	300	300	378	540	1,330	.....	3,500	570	378	378
18.....	530	405	300	300	405	350	1,330	.....	2,910	970	378	378
19.....	530	435	300	300	615	438	1,470	.....	2,560	870	350	378
20.....	530	465	350	350	615	438	1,610	1,610	2,470	825	350	378
21.....	530	465	405	300	695	470	1,900	1,610	2,630	780	350	350
22.....	498	465	350	300	695	540	1,900	1,830	2,380	738	350	350
23.....	530	378	378	300	615	540	1,900	1,680	2,060	695	350	350
24.....	565	378	350	350	615	780	2,560	1,610	2,000	655	405	350
25.....	565	405	405	350	615	1,330	2,560	1,680	2,220	615	378	350
26.....	680	405	465	350	615	1,330	2,220	2,140	2,380	540	378	350
27.....	600	378	530	325	615	1,760	1,900	2,060	2,910	505	350	350
28.....	530	350	405	350	695	1,330	1,610	1,900	2,910	505	350	350
29.....	530	350	405	350	.....	1,470	.....	1,980	2,060	505	350	350
30.....	530	350	405	350	.....	1,680	.....	2,220	1,900	505	350	325
31.....	498	.....	725	325	.....	1,830	.....	2,300	.....	470	350	.....
1906-7.												
1.....	325	438	615	.....	.....	1,330	1,080	1,200	3,100	2,220	1,080	405
2.....	325	405	578	.....	.....	1,200	1,080	1,080	2,910	2,730	1,200	405
3.....	325	405	578	.....	.....	1,200	1,200	1,080	4,600	2,380	1,330	405
4.....	325	438	540	.....	.....	1,140	1,330	970	4,140	2,560	1,200	405
5.....	325	470	540	.....	3,100	1,080	1,330	970	4,140	2,560	1,200	405
6.....	325	438	540	.....	2,560	1,020	1,470	870	3,700	2,380	1,080	405
7.....	325	505	738	.....	2,060	970	1,760	1,470	3,500	2,380	780	350
8.....	325	1,200	738	.....	1,610	970	1,900	2,220	3,100	2,220	780	350
9.....	325	970	780	.....	1,610	970	2,220	2,560	3,000	2,060	695	350
10.....	325	970	780	.....	1,610	970	2,560	2,640	2,560	2,060	780	540
11.....	325	1,080	825	.....	1,540	1,200	2,220	2,730	4,140	1,900	695	470
12.....	350	970	870	.....	1,470	1,080	2,370	2,560	2,220	1,700	695	405
13.....	350	3,100	870	.....	1,330	1,080	2,560	2,560	2,500	1,700	695	405
14.....	350	5,420	825	.....	1,330	970	2,560	2,380	2,910	1,610	695	350
15.....	350	5,220	825	.....	1,470	870	2,560	2,220	2,560	1,470	695	615
16.....	378	2,910	825	.....	1,610	870	2,560	3,100	2,220	1,470	615	470
17.....	405	2,380	780	.....	1,610	780	2,220	3,700	2,370	1,330	615	470
18.....	405	1,760	825	.....	1,470	780	2,060	3,700	2,370	1,470	540	470
19.....	378	1,470	825	.....	1,470	870	1,760	3,600	3,100	1,610	540	405
20.....	378	1,400	1,330	.....	1,330	1,080	1,760	3,500	2,910	1,470	540	405
21.....	378	1,400	1,760	.....	1,470	3,100	1,680	3,300	2,560	1,330	470	470
22.....	350	1,260	1,330	.....	1,470	2,060	1,610	3,100	3,300	1,200	470	350
23.....	350	1,200	1,260	.....	1,610	1,900	1,610	2,910	3,100	1,080	470	405
24.....	350	1,140	1,200	.....	1,610	1,610	1,470	2,730	2,730	1,200	405	470
25.....	350	1,080	1,200	.....	1,760	1,470	1,470	2,910	2,910	1,200	350	405
26.....	350	1,080	2,060	.....	1,900	1,330	1,400	2,820	3,100	1,200	405	255
27.....	615	970	1,610	.....	1,470	1,200	1,400	2,730	3,300	1,200	405	300
28.....	505	970	1,540	.....	1,470	1,200	1,330	3,100	3,920	1,080	350	300
29.....	470	870	1,470	.....	.....	1,080	1,330	3,100	3,100	1,330	405	300
30.....	470	780	1,330	.....	.....	970	1,260	3,100	2,910	1,470	405	300
31.....	438	.....	1,200	.....	.....	970	.....	3,500	.....	1,610	470	.....

Daily discharge, in second-feet, of Wallowa River at Minam, Oreg., for 1903-1907, 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.			415		748	748	1,210	1,340	3,900	3,500	1,080	415
2.			415		652	852	1,210	1,470	5,360	3,100	1,080	415
3.			485		564	852	1,210	2,060	5,780	3,300	1,080	415
4.			485		564	964	1,080	2,730	5,570	3,300	964	485
5.			485		564	852	1,080	2,560	5,360	3,300	964	485
6.			485		564	964	964	2,220	5,150	2,560	852	485
7.			415		564	748	852	2,220	4,310	2,220	748	485
8.			415		564	748	852	2,060	3,900	1,900	748	485
9.			485		564	748	964	2,220	3,100	2,060	652	485
10.			415		564	748	1,080	2,220	3,100	2,060	652	564
11.			415		564	748	964	1,900	2,910	2,220	652	564
12.			485		485	652	964	1,760	2,910	2,060	564	564
13.			485		652	652	1,080	1,470	4,210	1,900	564	485
14.			415	964	564	852	964	1,470	4,520	1,760	564	485
15.			415	1,080	485	852	1,080	1,610	4,520	1,760	564	564
16.		485	415	1,610	485	964	1,210	1,760	4,520	1,610	564	564
17.		485	415	1,610	1,470	1,210	1,340	1,760	4,520	1,610	564	564
18.		485	415	1,080	964	964	1,210	1,610	4,100	1,470	564	485
19.		485	415	1,210	852	964	1,340	1,610	4,100	1,340	485	415
20.		485	352	2,060	652	964	1,340	2,060	4,520	1,210	485	415
21.		564	352	1,610	564	852	1,210	2,220	4,100	1,210	485	485
22.		564	352	1,610	485	852	1,210	1,900	3,500	1,080	485	485
23.		564	415	1,210	485	748	1,340	1,760	3,500	1,080	485	485
24.		564	415	964	564	964	1,210	1,610	3,100	1,080	485	415
25.		564	415	964	564	1,080	1,340	1,900	3,100	852	485	415
26.		485	415	652	564	1,080	1,610	2,730	2,910	852	415	415
27.		415	415	652	564	1,210	1,760	3,100	2,730	1,080	415	415
28.		415	415	652	652	1,210	1,760	3,700	2,910	2,220	415	415
29.		415	352	652		1,210	1,470	3,100	3,100	1,470	415	415
30.		485	352	748		1,080	1,470	2,910	3,500	1,210	415	564
31.			352	748		1,080		2,910		1,210	415	
1909-10.												
1.	564	450	1,080		652	3,700	1,760	2,640	3,900	1,080	352	324
2.	485	450	1,020		652	5,570	1,760	2,380	3,800	1,080	352	324
3.	485	564	964		652	4,310	1,900	2,640	3,300	1,020	352	295
4.	485	652	748		652	3,500	1,760	2,560	2,560	964	352	295
5.	485	652	748		608	3,300	1,760	2,220	2,380	908	352	295
6.	485	652	748		608	2,380	1,980	2,140	2,560	852	352	295
7.	652	564	700		652	2,060	2,060	2,300	2,220	800	352	295
8.	564	608	748		652	1,900	2,220	2,730	1,900	748	352	295
9.	564	608	748		652	1,900	2,640	3,300	2,060	748	352	295
10.	564	608	748		652	1,900	3,000	4,520	1,760	700	324	295
11.	485	652	748		652	1,830	3,600	4,310	2,140	700	324	324
12.	485	608	700		652	2,060	3,700	3,700	2,380	652	324	324
13.	485	564	608		652	2,140	3,300	3,900	1,760	652	295	324
14.	485	564	564		700	2,380	2,910	3,800	1,760	608	295	324
15.	485	564	748		700	2,560	2,560	3,200	1,760	564	295	324
16.	485	485	652		652	2,560	2,380	3,200	1,900	600	324	352
17.	415	564	852		700	2,640	2,380	3,100	1,760	564	295	564
18.	415	652	852		652	2,820	2,560	3,000	1,610	564	295	415
19.	415	852	652		652	3,100	3,100	3,300	1,470	564	295	384
20.	415	1,140	652		652	3,500	3,800	2,910	1,340	524	295	352
21.	415	852	652		652	4,730	3,400	2,820	1,340	524	295	352
22.	415	1,210			700	4,100	3,100	2,910	1,340	450	295	564
23.	415	2,220			700	4,520	3,300	3,300	1,340	524	295	415
24.	415	2,910			700	3,500	3,700	3,300	1,270	524	295	384
25.	415	2,060			700	2,910	4,310	3,700	1,210	485	295	352
26.	415	1,470			700	2,560	4,730	3,100	1,210	415	295	352
27.	415	1,400			700	2,300	4,100	3,100	1,210	415	295	352
28.	415	1,210			852	2,060	3,900	2,560	1,210	415	295	352
29.	415	1,080				1,830	3,300	2,560	1,140	415	295	352
30.	415	1,080				1,610	2,910	2,910	1,140	415	295	352
31.	415					2,060		3,100		384	295	

NOTE.—Daily discharge determined as follows:

1903 and 1904. From rating curve fairly well defined below 2,000 second-feet.

1905. From curve well defined between 300 and 2,000 second-feet.

1906 and 1907. From curves well defined between 300 and 4,000 second-feet.

1909 and 1910. From curves well defined between 220 and 4,000 second-feet. Estimated on account of ice,

as follows: Jan. 1-13, 1909, 350 second-feet; Dec. 22-31, 1909, 500 second-feet; Jan., 1910, 400 second-feet.

Monthly discharge of Wallowa River at Minam, Oreg., for 1903-1907 and 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
November.....	1,800	545	999	27,700	B.
December.....	834	488	652	40,100	B.
January.....	606	386	501	30,800	C.
February.....	1,950	386	661	38,000	C.
March.....	3,510	674	1,270	78,300	B.
April.....	3,790	1,140	2,430	145,000	B.
May.....	4,080	1,800	2,560	157,000	C.
June.....	3,790	2,510	3,080	183,000	C.
July.....	3,510	926	2,200	135,000	B.
August.....	834	488	641	39,410	B.
September.....	545	386	428	25,500	B.
The period.....				900,000	
1904-5.					
October.....	545	386	440	27,000	B.
November.....	435	386	388	23,100	B.
December.....	488	386	389	23,900	B.
January.....	680	255	396	24,400	C.
February.....	600	215	401	22,300	C.
March.....	770	600	683	42,000	B.
April.....	1,680	680	944	56,200	B.
May.....	3,480	1,080	1,580	97,200	B.
June.....	3,650	1,190	2,450	146,000	C.
July.....	1,430	405	768	47,200	B.
August.....	405	215	287	17,600	B.
September.....	530	215	273	16,200	B.
The year.....	3,650	215	750	543,000	
1905-6.					
October.....	680	378	512	31,500	B.
November.....	530	350	434	25,800	B.
December.....	725	235	355	21,800	B.
January.....	378	300	326	20,000	C.
February.....	695	300	453	25,200	B.
March.....	1,830	350	759	46,700	B.
April 1-28.....	2,560	540	1,520	84,400	B.
May 20-31.....	2,300	1,610	1,880	44,700	B.
June.....	3,700	1,900	2,600	15,500	B.
July.....	2,380	470	1,280	78,700	B.
August.....	470	350	384	23,600	B.
September.....	405	325	359	21,400	B.
1906-7.					
October.....	615	325	372	22,900	B.
November.....	5,420	405	1,420	84,500	B.
December.....	2,060	540	1,010	62,100	B.
February 5-28.....	3,100	1,330	1,600	79,100	B.
March.....	3,100	780	1,200	73,800	B.
April.....	2,560	1,080	1,770	105,000	B.
May.....	3,700	870	2,530	156,000	B.
June.....	4,600	2,220	3,100	184,000	B.
July.....	2,730	1,080	1,720	106,000	B.
August.....	1,330	350	679	41,800	B.
September.....	615	255	401	23,900	B.
1908-9.					
November 16-31.....	564	415	497	14,800	B.
December.....	485	352	419	25,800	B.
January.....	2,060		^a 794	48,800	C.
February.....	1,470	485	626	34,800	B.
March.....	1,210	652	917	56,400	A.
April.....	1,760	852	1,210	72,000	A.
May.....	3,700	1,340	2,130	131,000	A.
June.....	5,780	2,730	3,960	236,000	B.
July.....	3,500	852	1,860	114,000	A.
August.....	1,080	415	623	38,300	A.
September.....	564	415	478	28,400	A.
The period.....				890,000	

^a Estimated on account of ice.

Monthly discharge of Wallowa River at Minam, Oreg., for 1903-1907 and 1908-1910—
Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	652	415	467	28, 700	A.
November.....	2, 910	450	932	55, 500	A.
December.....	1, 080	.....	a 675	41, 500	B.
January.....	.....	.....	a 400	24, 600	D.
February.....	852	608	671	37, 300	C.
March.....	5, 570	1, 610	2, 850	175, 000	B.
April.....	4, 730	1, 760	2, 930	174, 000	B.
May.....	4, 520	2, 140	3, 070	189, 000	B.
June.....	3, 900	1, 140	1, 890	112, 000	A.
July.....	1, 080	384	641	39, 400	A.
August.....	352	295	315	19, 400	A.
September.....	564	295	351	20, 900	A.
The year.....	5, 570	.....	1, 270	917, 000	.....

a Estimated on account of ice.

WALLA WALLA RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Walla Walla River rises on the western slope of the Blue Mountains and flows westward into the Columbia. Its drainage basin lies immediately north of that of the Umatilla and is in many respects similar.

Altitudes within the basin range from 5,000 feet on the headwaters to 1,000 feet near Walla Walla. The mean annual rainfall ranges from 30 inches in the upper portion to 12 in the lower portion of the area. Only the upper part of the area is forested, and that in the manner characteristic of the Blue Mountains. The lower half is given to the production of wheat without irrigation, but the lands contiguous to the streams are extensively irrigated.

Climate and soil combine to make the country wonderfully productive, and the agricultural products range from the hardier forage crops to fancy fruits.

The headwaters of the stream afford favorable opportunities for water power and storage which, if developed, would more than double the value of this stream. The entire low-water flow of the river is appropriated many times for irrigation, and the only solution to a situation that has been aggravated in the extreme and promises to become even more critical as additional areas are irrigated lies in the construction of storage reservoirs.

The conditions for obtaining reliable records of stream flow are not good. The river throughout is swift, and the bed is composed of gravel that changes with every freshet. On this account the records are incomplete and usually cover the period between floods. Floods on this stream are caused suddenly by chinook winds that melt the snows on the headwaters. Some of these floods have been exceedingly harmful, rendering large areas of fine farm lands worthless and causing great damage to life and property.

SOUTH FORK OF WALLA WALLA RIVER 12 MILES ABOVE MILTON, OREG.

Location.—At ranch of M. Redden, 12 miles above Milton, Oreg.

Records presented.—February 15 to October 30, 1903.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Rocks and gravel.

Discharge measurements.—Made from foot log or by wading.

Estimates withheld; data poor.

Discharge measurements of South Fork of Walla Walla River 12 miles above Milton, Oreg., in 1903.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
Feb. 10	T. A. Noble.....	1.66	171	June 24	Whistler and Lewis....	1.61	179
16 ^a	do.....	1.58	171	Sept. 7	J. H. Lewis.....	1.67	181
16	do.....	1.57	143	Oct. 30	Yates and Lewis.....	1.77	128
May 28	F. W. Huber.....	2.20	297	Dec. 29	H. A. Yates.....	1.80	173

^a Measured 2 miles above gage.*Daily gage height, in feet, of South Fork of Walla Walla River 12 miles above Milton, Oreg., for 1903.*

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1.....		1.57	2.33	2.11	2.18	1.64	1.56	1.55	1.68
2.....		1.58	2.22	2.11	2.07	1.65	1.56	1.54	.....
3.....		1.57	2.07	2.19	2.02	1.66	1.56	1.54	.....
4.....			2.02	2.24	1.97		1.56	.....	1.74
5.....		1.56	1.96	2.33	1.93	1.67	1.56	1.53	2.15
6.....		1.55	1.94		1.91		1.55	1.54	2.15
7.....		1.55	1.90	2.31	1.89	1.62	1.55	1.53	1.93
8.....		1.55	1.90	2.27	1.87	1.61	1.55	1.62	1.87
9.....		1.53		2.17	1.85	1.60	1.55	1.59	1.82
10.....		1.55	1.89	2.20			1.55	2.18	.....
11.....			1.58	1.89	2.13	1.69		1.55	1.75
12.....			1.58	1.88	2.20	1.70		1.55	1.78
13.....			1.57	1.84	2.32	1.80		1.55	1.83
14.....			1.57	1.84		1.75	1.60	1.54	1.78
15.....	1.58	1.56	1.86			1.60		1.73	.....
16.....	1.57	1.58	1.90		1.73	1.59			1.71
17.....	1.58		1.97	2.11	1.69	1.59	1.54	1.72	1.74
18.....	1.58	1.56	1.96	2.08	1.67		1.54	.....	.....
19.....	1.58	1.55	1.94	2.02	1.66	1.58	1.53	1.69	.....
20.....	1.58	1.56	1.96	1.98		1.59		1.68	1.76
21.....	1.58	1.59	2.04	1.95	1.63	1.58	1.53	1.68	1.75
22.....	1.59	1.61	2.22	1.94	1.66	1.58	1.53	1.67	.....
23.....	1.59	1.74	2.21	1.94	1.64	1.58	1.54	1.67	.....
24.....	1.60	1.93	2.22	1.96	1.63	1.58	1.54	.....	1.74
25.....	1.60	2.00	2.34	2.00	1.63	1.58	1.59	1.70	.....
26.....		2.04	2.41	2.10	1.61	1.58	1.83	1.69	.....
27.....		1.90	2.26	2.07		1.57	1.67	1.68	.....
28.....	1.59		2.18	2.11	1.68	1.57	1.61	1.68	1.75
29.....		2.86	2.17	2.04	1.61	1.56	1.57	.....	1.76
30.....		2.82	2.14	2.07	1.62	1.56	1.56	1.68	1.76
31.....		2.50		2.21		1.56	1.55	.....	.....

SOUTH FORK OF WALLA WALLA RIVER NEAR MILTON, OREG.

Location.—About sec. 21, T. 5 N., R. 36 E., three-fourths of a mile above county bridge, 1 mile above junction with North Fork, 6 miles above Milton.

Records presented.—November 1, 1903, to June 3, 1906.

Drainage area.—Not measured.

Gage.—Vertical staff on right bank.

Channel.—Gravel and small bowlders.

Discharge measurements.—Made from county bridge.

Accuracy.—Records good.

Discharge measurements of South Fork of Walla Walla River near Milton, Oreg., in 1903-1906.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
1903.				1905.			
Sept. 7	J. H. Lewis.....	1.67	149	May 5	J. H. Lewis.....	1.78	270
Oct. 30	Yates and Lewis.....	1.77	148	July 21	W. C. Sawyer.....	1.48	98
Dec. 29	H. A. Yates.....	1.80	168	Aug. 12	Sawyer and Lewis.....	1.50	101
1904.				Sept. 14	P. A. Cupper.....	1.65	124
Apr. 15	Yates and Saxton.....	2.70	955	Oct. 16	do.....	1.65	136
May 14	Murphy and Sawyer.....	2.18	505	20	do.....	1.60	116
Aug. 12	W. C. Sawyer.....	1.51	118	Nov. 21	do.....	1.48	114
Oct. 20	do.....	1.52	113	Dec. 28	do.....	1.55	121
1905.				1906.			
Feb. 8	W. C. Sawyer.....	1.51	153	Feb. 20	R. S. Hall.....	2.10	390
Mar. 18	H. A. Yates.....	1.67	193	Mar. 23	P. A. Cupper.....	1.50	159
				May 24	do.....	1.66	171

Daily gage height, in feet, of South Fork of Walla Walla River near Milton, Oreg., for 1903-1906.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....		1.79	2.05	1.75	1.70	1.90	1.85	.....	2.00	1.60	1.55	.....
2.....		1.78	2.07	1.75	1.70	1.95	1.75	2.10	1.90	1.60	.....	.....
3.....		1.79	2.00	1.75	1.70	1.90	1.85	2.20	1.90	1.60	.....	.....
4.....		1.79	1.90	1.75	1.70	1.90	.....	2.10	1.90	.....	1.55	.....
5.....		1.85	1.70	1.70	1.90	1.75	2.00	.....	1.65	.....	.....
6.....		1.85	1.70	1.70	2.00	1.95	2.05	1.95	1.60	.....	1.50
7.....		1.87	1.80	1.70	.....	2.40	1.85	2.10	1.85	1.60	.....	.....
8.....		1.84	1.80	1.70	1.70	2.70	1.80	2.00	1.80	1.65	.....	1.50
9.....		1.90	1.75	1.75	1.70	2.45	1.85	2.00	1.75	1.60	1.55	.....
10.....		1.85	1.75	1.80	1.70	2.10	.....	2.20	1.75	.....	.....	.....
11.....		1.90	1.80	1.80	.....	1.90	2.40	2.15	1.70	1.60	.....	.....
12.....		1.93	1.80	1.80	1.70	1.80	2.65	2.20	1.70	1.60	1.51	.....
13.....		1.91	1.75	1.90	1.75	1.80	2.90	2.20	1.65	1.55	.....	.....
14.....		2.22	1.75	2.00	1.70	1.70	3.40	2.15	1.65	1.55	1.50	.....
15.....		2.10	1.75	2.10	1.85	1.80	3.20	.....	1.65	1.60	.....	.....
16.....		2.00	2.10	2.00	2.10	1.75	2.50	2.10	1.65	1.60	.....	1.50
17.....		1.95	2.20	2.00	2.00	1.70	.....	2.10	1.65	1.65	.....	1.50
18.....		1.90	2.10	1.95	1.95	1.75	2.30	.....	1.65	1.65	.....	1.50
19.....		1.83	2.00	1.80	1.90	1.70	2.50	.....	1.60	1.65	.....	.....
20.....		1.89	2.00	1.85	1.85	1.80	2.50	2.15	1.60	1.60	.....	.....
21.....		2.25	2.00	1.85	1.80	1.75	2.35	2.20	1.60	1.60	1.50	1.50
22.....		2.32	2.05	1.80	2.00	1.70	2.20	2.20	1.60	1.60	.....	.....
23.....		2.12	2.05	1.85	2.05	1.60	2.10	2.25	1.55	1.60	.....	1.50
24.....		2.02	2.00	.....	2.00	1.50	2.00	2.10	1.50	1.60	.....	.....
25.....		1.95	1.92	1.85	2.00	1.50	2.00	2.00	.....	.....	.....	1.50
26.....		1.95	1.87	1.80	2.00	1.45	2.05	1.95	1.55	1.55	.....	.....
27.....		1.81	1.75	2.05	1.45	2.20	1.90	1.60	1.55	.....	.....
28.....		1.97	.....	.....	2.00	1.50	2.25	1.90	1.60	1.55	1.50	1.50
29.....		1.92	1.80	1.75	2.00	1.85	2.20	.....	1.60	1.55	.....	1.50
30.....		1.96	1.80	.....	.....	2.00	2.10	1.90	1.60	1.55	.....	1.50
31.....		1.70	.....	1.80	.....	.....	.....	1.55	.....	.....

Daily gage height, in feet, of South Fork of Walla Walla River near Milton, Oreg., for 1903-1906—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.		1.5	1.5	1.75	1.6	1.65	1.75	1.8	1.7	1.7	1.6	1.5
2.		1.5	1.5	1.7	1.6	1.65	1.8	1.75	1.7	1.65	1.5	1.55
3.	1.5	1.5	1.5	1.65	1.6	1.7	1.8	1.75	1.75	1.6	1.5	1.5
4.	1.5	1.5	1.5	1.6	1.55	1.7	1.8		1.7	1.6	1.5	1.6
5.	1.5	1.5	1.5	1.6	1.55	1.65	1.8	1.8	1.7	1.6	1.6	1.6
6.	1.5	1.5	1.5	1.6	1.55	1.65	1.8	1.8	1.7	1.6	1.5	1.5
7.	1.55	1.5	1.5	1.6	1.55	1.65	1.8	1.8	1.65	1.6	1.5	1.55
8.		1.5	1.55	1.55		1.65		1.85	1.65	1.6	1.5	1.55
9.	1.55	1.5	1.55	1.55		1.6	1.85	1.85	1.65	1.5	1.5	1.6
10.	1.5	1.5	1.55			1.6	1.8	1.83		1.6	1.5	1.5
11.	1.5	1.5	1.55	1.55	1.5	1.6	1.75	1.9	1.6	1.5	1.5	1.5
12.	1.6	1.5	1.55	1.55	1.7	1.6	1.75	1.95	1.6	1.5	1.5	1.5
13.	1.55	1.5	1.55	1.55	1.7	1.6	1.75	1.95	1.55	1.5	1.5	1.6
14.	1.55	1.55	1.6	1.5	1.5	1.65	1.7	1.9	1.7	1.5	1.5	1.6
15.	1.6	1.55	1.6	1.5	1.5		1.7	1.85	1.65	1.5	1.5	1.6
16.	1.55	1.55	1.6	1.55	1.45	1.65	1.75	1.8	1.7	1.5	1.5	1.6
17.	1.55	1.55	1.6	1.55	1.45	1.7	1.75	1.9	1.7	1.5	1.55	1.55
18.	1.55	1.55	1.6	1.55	1.5	1.7	1.75	1.85	1.7	1.5	1.5	1.6
19.	1.6		1.6	1.55	1.5	1.7	2.0	1.85	1.65	1.5	1.45	1.55
20.	1.55	1.55	1.6	1.6	1.5	1.6	2.0	1.8	1.65	1.5	1.45	1.6
21.	1.55	1.55	1.6	1.55	1.5	1.75	1.95	1.75	1.6	1.5	1.55	1.6
22.	1.55	1.55	1.6	1.6		1.7	1.95	1.75	1.6	1.5	1.55	1.55
23.	1.5	1.6	1.55	1.7	1.6	1.7	1.95	1.75	1.65	1.5	1.5	1.6
24.	1.5		1.6	1.75	1.65	2.15	1.95		1.7	1.5	1.5	1.6
25.	1.5	1.6	1.6	1.8	1.7	2.0	1.95		1.7	1.5	1.55	1.6
26.	1.5	1.6	1.6	1.7	1.75	2.2	1.95	1.75	1.7	1.5	1.5	1.6
27.	1.5	1.6	1.6	1.7		2.0	1.9	1.75	1.7	1.5	1.5	1.6
28.	1.5	1.6	1.6	1.7		1.95	1.9	1.7	1.7	1.5	1.5	1.6
29.		1.5	1.6	1.7		1.85	1.85	1.7	1.7	1.6	1.55	1.6
30.	1.5	1.5	1.78	1.65		1.75	1.8	1.7	1.7	1.5	1.55	1.6
31.	1.5		1.75	1.65		1.75		1.7		1.6	1.5	
1905-6.												
1.	1.6	1.5	1.55		1.7	1.7	2.0	2.0	1.2			
2.	1.6	1.5	1.6	1.55	1.7	1.65	2.0	2.0				
3.			1.7	1.55		1.65	2.0		1.0			
4.	1.6		1.65		1.65	1.65	2.0	2.0				
5.	1.6	1.45	1.65	1.6	1.6	1.6	2.0	1.95				
6.		1.5	1.7	1.7	1.6	1.6	2.0	1.9				
7.	1.65	1.5	1.7		1.6	1.6	2.1	1.85				
8.	1.7	1.45	1.65	1.65	1.6	1.7	2.1	1.8				
9.	1.65	1.5	1.65	1.65	1.6		2.1	1.85				
10.	1.6	1.45	1.6	1.7		1.7	2.0					
11.	1.6	1.45	1.6	1.65	1.55			1.9				
12.	1.6	1.5	1.6		1.55		1.8	1.9				
13.	1.6	1.45	1.55	1.65	1.55		1.8	1.85				
14.	1.6	1.45		1.65	1.55		1.8	1.85				
15.	1.6	1.5	1.5	1.65	1.55	1.5	1.9	1.8				
16.	1.6	1.5	1.5	1.7	1.55		1.9					
17.	1.6	1.5	1.6	1.7			1.9	1.75				
18.	1.65	1.5	1.65	1.7		1.5	1.9	1.7				
19.	1.6	1.5	1.6	1.7	2.2	1.5	1.9	1.7				
20.	1.6	1.5	1.6		2.0	1.5	1.95	1.7				
21.	1.6	1.5	1.6	1.65	2.1	1.5	2.0					
22.		1.5	1.6	1.65	2.0		2.2	1.7				
23.	1.5	1.5	1.55	1.8	1.9	1.5	2.2	1.7				
24.	1.5	1.5	1.55	1.8	1.8	1.6	2.1					
25.	1.55	1.5		1.95	1.8	1.7	2.05					
26.	1.55	1.6		1.9	1.8	2.0	2.0	1.7				
27.	1.6	1.5		1.8	1.75	2.0	1.95	1.7				
28.		1.5	1.6	1.75	1.75	2.0	1.9	1.7				
29.	1.7	1.5	1.55	1.7		2.0	1.95	2.86				
30.	1.65		1.55	1.7		1.95	2.0					
31.	1.5		1.55	1.7		2.15						

Daily discharge, in second-feet, of South Fork of Walla Walla River near Milton, Oreg., for 1903-1906.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....		161	290	146	126	210	250	410	340	145	130	114
2.....		157	302	146	126	235	202	410	275	145	130	114
3.....		161	260	146	126	210	250	490	275	145	130	114
4.....		161	210	146	126	210	226	410	275	154	130	114
5.....		173	188	126	126	210	202	340	292	162	130	114
6.....		184	188	126	126	260	308	375	308	145	130	114
7.....		196	165	126	126	560	250	410	250	145	130	114
8.....		183	165	126	126	830	225	340	225	162	130	114
9.....		210	146	146	126	705	250	340	202	145	130	114
10.....		188	146	165	126	410	455	490	202	145	126	114
11.....		210	165	165	126	275	660	450	180	145	122	114
12.....		225	165	165	126	225	900	490	180	145	117	114
13.....		215	146	210	146	225	1,150	490	162	130	116	114
14.....		406	146	260	126	180	1,650	450	162	130	114	114
15.....		320	146	320	188	225	1,450	430	162	145	114	114
16.....		260	320	260	320	202	750	410	162	145	114	114
17.....		235	390	260	260	180	660	410	162	162	114	114
18.....		210	320	235	235	202	570	427	162	162	114	114
19.....		178	260	165	210	180	750	427	145	162	114	114
20.....		206	260	188	188	225	750	450	145	145	114	114
21.....		430	260	188	165	202	615	490	145	145	114	114
22.....		488	290	165	260	180	490	490	138	145	114	114
23.....		334	290	188	290	145	410	530	130	145	114	114
24.....		272	260	188	260	114	340	410	114	145	114	114
25.....		235	220	188	260	114	340	340	122	138	114	114
26.....		235	196	165	260	100	375	308	130	130	114	114
27.....		240	170	146	290	100	490	275	145	130	114	114
28.....		245	168	146	260	114	530	275	145	130	114	114
29.....		220	165	146	260	250	490	275	145	130	114	114
30.....		240	165	136	-----	340	410	275	145	130	114	114
31.....		-----	156	126	-----	225	-----	308	-----	130	-----	-----
1904-5.												
1.....	114	114	114	202	185	202	240	260	150	150	120	100
2.....	114	114	114	180	185	202	260	240	150	135	100	110
3.....	114	114	114	162	185	220	260	240	170	120	100	100
4.....	114	114	114	145	168	220	260	250	150	120	100	120
5.....	114	114	114	145	168	202	260	260	150	120	120	120
6.....	114	114	114	145	168	202	260	260	150	120	100	100
7.....	130	114	114	145	168	202	260	260	135	120	100	110
8.....	130	114	130	130	164	202	272	285	135	120	100	110
9.....	130	114	130	130	160	185	285	285	135	100	100	120
10.....	114	114	130	130	156	185	260	275	128	120	100	100
11.....	114	114	130	130	152	185	240	310	120	100	100	100
12.....	145	114	130	130	220	185	240	265	120	100	100	100
13.....	130	114	130	130	220	185	240	265	110	100	100	120
14.....	130	130	145	114	152	202	220	235	150	100	100	120
15.....	145	130	145	114	152	202	220	212	135	100	100	120
16.....	130	130	145	130	140	202	240	190	150	100	100	120
17.....	130	130	145	130	140	220	240	235	150	100	110	110
18.....	130	130	145	130	152	220	240	212	150	100	100	120
19.....	145	130	145	130	152	220	360	212	135	100	93	110
20.....	130	130	145	145	152	185	300	190	135	100	93	120
21.....	130	130	145	130	152	240	335	170	120	100	110	120
22.....	130	130	145	145	168	220	335	170	120	100	110	110
23.....	114	145	130	180	185	220	335	170	135	100	100	120
24.....	114	145	145	202	202	455	335	170	150	100	100	120
25.....	114	145	145	225	220	360	335	170	150	100	110	120
26.....	114	145	145	220	240	490	335	170	150	100	100	120
27.....	114	145	145	220	227	360	310	170	150	100	100	120
28.....	114	145	145	220	215	335	310	150	150	100	100	120
29.....	114	114	145	220	-----	285	285	150	150	120	110	120
30.....	114	114	216	202	-----	240	260	150	150	100	110	120
31.....	114	-----	202	202	-----	240	-----	150	-----	120	-----	-----

Daily discharge, in second-feet, of South Fork of Walla Walla River near Milton, Oreg., for 1903-1906—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	120	114	130	130	180	220	360	340				
2.....	120	114	145	130	180	202	360	340				
3.....	120	110	180	130	171	202	360	340				
4.....	120	105	162	138	162	202	360	340				
5.....	120	100	162	145	145	185	360	308				
6.....	128	114	180	180	145	185	360	275				
7.....	135	114	180	171	145	185	420	250				
8.....	150	100	162	162	145	220	420	225				
9.....	135	114	162	162	145	220	420	250				
10.....	120	100	145	180	138	220	360	262				
11.....	120	100	145	162	130	206	310	275				
12.....	120	114	145	162	130	193	260	275				
13.....	120	100	130	162	130	179	260	250				
14.....	120	100	122	162	130	166	260	250				
15.....	120	114	114	162	130	152	310	225				
16.....	120	114	114	180	130	152	310	213				
17.....	120	114	145	180	130	152	310	202				
18.....	135	114	162	180	310	152	310	180				
19.....	120	114	145	180	490	152	310	180				
20.....	120	114	145	171	340	152	335	180				
21.....	120	114	145	162	420	152	360	180				
22.....	110	114	145	162	360	152	490	180				
23.....	100	114	130	225	310	152	490	180				
24.....	100	114	130	225	260	185	410	180				
25.....	110	114	134	308	260	220	375	180				
26.....	110	145	138	275	260	360	340	180				
27.....	120	114	142	225	240	360	308	180				
28.....	135	114	145	202	240	360	275	180				
29.....	150	114	130	180		360	308	1,110				
30.....	162	122	130	180		335	340					
31.....	114		130	180		455						

NOTE.—Daily discharge determined from five fairly well defined rating curves applicable as follows: Nov. 1, 1903, to Mar. 8, 1904; Mar. 9, 1904, to Jan. 25, 1905; Oct. 30, 1905, to Feb. 20, 1906, and Apr. 24 to May 29, 1906; Jan. 26 to May 11, 1905, and Feb. 21 to Apr. 23, 1906; May 12 to Oct. 29, 1905.

Monthly discharge of South Fork of Walla Walla River near Milton, Oreg., for 1903-1906.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
November.....	488	157	239	14,200	B.
December.....	390	146	217	13,300	B.
January.....	320	126	178	10,900	B.
February.....	320	126	189	10,900	B.
March.....	830	100	253	15,600	D.
April.....	1,650	202	553	32,900	C.
May.....	530	275	401	24,700	B.
June.....	340	114	188	11,200	B.
July.....	162	130	144	8,850	B.
August.....	130	114	119	7,320	B.
September.....	114	114	114	6,780	B.
The period.....				157,000	

Monthly discharge of South Fork of Walla Walla River near Milton, Oreg., for 1903-1906—
Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
October.....	145	114	123	7,560	B.
November.....	145	114	125	7,440	B.
December.....	216	114	139	8,550	B.
January.....	225	114	160	9,840	B.
February.....	240	140	177	9,830	B.
March.....	490	185	241	14,800	B.
April.....	360	220	280	16,700	B.
May.....	310	150	217	13,300	B.
June.....	170	110	141	8,390	B.
July.....	150	100	109	6,700	B.
August.....	120	93	103	6,330	B.
September.....	120	100	114	6,780	C.
The year.....	490	93	160	116,000	
1905-6.					
October.....	162	100	123	7,560	B.
November.....	145	100	112	6,660	B.
December.....	180	114	144	8,850	B.
January.....	308	130	179	11,000	B.
February.....	490	130	213	11,800	B.
March.....	455	152	219	13,500	B.
April.....	490	260	348	20,700	C.
May 1-29.....	1,110	180	266	15,300	B.
The period.....				95,400	

SOUTH FORK OF WALLA WALLA RIVER ABOVE PACIFIC POWER & LIGHT
CO.'S INTAKE, NEAR MILTON, OREG.

Location.—In the SE. $\frac{1}{4}$ sec. 9, T. 4 N., R. 37 E., one-fourth mile above headgate of Pacific Power & Light Co.'s pipe line, about 12 miles above Milton; above all diversions.

Records presented.—August 10 to September 15, 1906; January 1, 1907, to March 14, 1908; October 14, 1908, to September 30, 1910.

Drainage area.—72 square miles.

Gage.—Vertical staff.

Channel.—Gravel and small bowlders; practically permanent.

Discharge measurements.—Made by wading near gage.

Winter flow.—Not affected by ice.

Accuracy.—Records good.

Cooperation.—Gage heights furnished by the Pacific Power & Light Co.

Discharge measurements of South Fork of Walla Walla River above Pacific Power & Light
Co.'s intake, near Milton, Oreg., in 1906-1910.

Date.	Hydrographer.	Gage height.	Dis- charge.	Date.	Hydrographer.	Gage height.	Dis- charge.
1906.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 10	J. C. Stevens.....	2.50	120	Oct. 14	Allen and George.....	2.86	161
Dec. 13	H. D. McGlashan.....	3.73	183	1910.			
1907.				Aug. 27	R. W. Davenport.....	2.57	102
Sept. 11	E. F. Kriegsman.....	3.00	118				

Daily gage height, in feet, of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1906.			1906.			1906.		
1.....		2.5	11.....	2.5	2.51	21.....	2.5	.....
2.....		2.5	12.....	2.53	2.5	22.....	2.57	.....
3.....		2.5	13.....	2.55	2.55	23.....	2.55	.....
4.....		2.5	14.....	2.52	2.50	24.....	2.53	.....
5.....		2.5	15.....	2.52	2.55	25.....	2.52	.....
6.....		2.5	16.....	2.51	.....	26.....	2.52	.....
7.....		2.5	17.....	2.51	.....	27.....	2.52	.....
8.....		2.5	18.....	2.52	.....	28.....	2.5	.....
9.....		2.52	19.....	2.5	.....	29.....	2.5	.....
10.....	2.5	2.52	20.....	2.5	.....	30.....	2.5	.....
						31.....	2.5	.....

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.									
1.....	3.5	3.5	3.5	3.4	3.5	3.3	3.0	3.0	3.0
2.....	3.5	3.35	3.4	3.4	3.5	3.3	3.0	3.0	3.0
3.....	3.5	3.3	3.4	3.4	3.5	3.3	3.0	3.0	3.0
4.....	3.5	3.35	3.4	3.4	3.6	3.3	3.0	3.0	3.0
5.....	3.5	3.7	3.4	3.4	3.6	3.2	3.0	3.0	3.0
6.....	3.4	3.9	3.4	3.45	3.6	3.2	3.0	3.0	3.0
7.....	3.4	3.7	3.3	3.6	3.6	3.2	3.0	3.0	3.0
8.....	3.3	3.7	3.3	3.75	3.7	3.2	3.0	3.0	3.0
9.....	3.3	3.7	3.3	3.95	3.7	3.2	3.0	3.0	3.0
10.....	3.3	3.7	3.3	3.95	3.7	3.2	3.0	3.0	3.0
11.....	3.3	3.7	3.3	3.85	3.6	3.2	3.0	3.0	3.0
12.....	3.2	3.55	3.3	3.65	3.6	3.2	3.0	3.0	3.0
13.....	3.2	3.5	3.2	3.65	3.5	3.2	3.0	3.0	3.0
14.....	3.2	3.5	3.2	3.8	3.5	3.2	3.0	3.0	3.0
15.....	3.2	3.5	3.2	3.7	3.5	3.1	3.0	3.0	3.0
16.....	3.1	3.4	3.2	3.7	3.5	3.1	3.0	3.0	3.1
17.....	3.2	3.5	3.25	3.6	3.65	3.1	3.0	3.0	3.1
18.....	3.2	3.45	3.4	3.5	3.8	3.1	3.0	3.0	3.1
19.....	3.1	3.4	3.5	3.5	3.7	3.1	3.0	3.0	3.0
20.....	3.1	3.75	3.9	3.5	3.7	3.1	3.0	3.0	3.0
21.....	3.1	3.75	3.75	3.5	3.6	3.1	3.0	3.0	3.0
22.....	3.1	3.7	3.6	3.5	3.6	3.1	3.0	3.0	3.0
23.....	3.1	3.7	3.5	3.5	3.5	3.2	3.0	3.0	3.0
24.....	3.1	3.75	3.45	3.5	3.5	3.1	3.0	3.0	3.0
25.....	3.3	3.9	3.4	3.5	3.5	3.1	3.0	3.0	3.0
26.....	3.3	3.8	3.4	3.5	3.4	3.1	3.0	3.0	3.0
27.....	3.1	3.65	3.4	3.5	3.4	3.1	3.0	3.0	3.0
28.....	3.1	3.65	3.3	3.5	3.4	3.1	3.0	3.0	3.0
29.....	3.1	.....	3.3	3.5	3.4	3.1	3.0	3.0	3.0
30.....	3.1	.....	3.4	3.4	3.4	3.1	3.0	3.0	3.0
31.....	3.4	.....	3.45	.....	3.4	.....	3.0	3.0	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1907-8.							1907-8.						
1.....	3.0	3.1	3.2	3.2	3.1	3.2	16.....	3.0	3.1	3.2	3.1	3.1	.....
2.....	3.0	3.1	3.2	3.2	3.1	3.2	17.....	3.0	3.1	3.2	3.1	3.2	.....
3.....	3.0	3.1	3.1	3.2	3.1	3.2	18.....	3.0	3.1	3.2	3.1	3.2	.....
4.....	3.0	3.1	3.1	3.2	3.1	3.2	19.....	3.0	3.1	3.1	3.2	3.2	.....
5.....	3.0	3.1	3.1	3.2	3.1	3.2	20.....	3.0	3.1	3.15	3.2	3.2	.....
6.....	3.0	3.1	3.1	3.2	3.1	3.1	21.....	3.0	3.1	3.3	3.2	3.2	.....
7.....	3.0	3.1	3.3	3.2	3.1	3.1	22.....	3.0	3.2	3.3	3.2	3.2	.....
8.....	3.0	3.1	3.3	3.2	3.1	3.1	23.....	3.0	3.3	3.3	3.2	3.2	.....
9.....	3.0	3.1	3.2	3.2	3.1	3.1	24.....	3.0	3.45	3.6	3.2	3.2	.....
10.....	3.0	3.1	3.2	3.2	3.1	3.1	25.....	3.0	3.35	3.45	3.2	3.2	.....
11.....	3.0	3.1	3.2	3.2	3.1	3.2	26.....	3.0	3.3	3.75	3.2	3.2	.....
12.....	3.0	3.1	3.2	3.2	3.1	3.3	27.....	3.0	3.2	3.55	3.2	3.3	.....
13.....	3.0	3.1	3.3	3.2	3.1	3.45	28.....	3.0	3.2	3.35	3.15	3.3	.....
14.....	3.0	3.1	3.3	3.1	3.1	3.6	29.....	3.0	3.2	3.3	3.1	3.3	.....
15.....	3.0	3.1	3.2	3.1	3.1	.....	30.....	3.0	3.2	3.3	3.1	.....	.....
							31.....	3.1	.....	3.3	3.1	.....	.....

Daily gage height, in feet, of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	-----	2.8	2.7	2.7	2.8	2.9	3.1	3.35	3.3	2.8	2.7	2.7
2	-----	2.8	2.7	2.7	2.8	2.9	3.1	3.55	3.3	2.8	2.7	2.7
3	-----	2.8	2.7	2.7	2.8	3.0	3.1	3.4	3.3	2.8	2.7	2.7
4	-----	2.8	2.7	2.7	2.8	3.1	3.1	3.4	3.3	2.8	2.7	2.7
5	-----	2.7	2.7	2.7	2.8	3.1	3.1	3.4	3.2	2.8	2.7	2.7
6	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.4	3.2	2.8	2.7	2.7
7	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.4	3.2	2.8	2.7	2.7
8	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.3	3.2	2.8	2.7	2.7
9	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.3	3.2	2.8	2.7	2.7
10	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.3	3.1	2.8	2.7	2.7
11	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.3	3.1	2.8	2.7	2.7
12	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.3	3.1	2.8	2.7	2.7
13	-----	2.7	2.7	2.7	2.8	3.0	3.1	3.3	3.1	2.7	2.7	2.7
14	-----	2.9	2.7	2.7	2.8	3.0	3.1	3.3	3.0	2.7	2.7	2.7
15	-----	2.8	2.7	2.7	2.9	3.1	3.1	3.3	3.0	2.7	2.7	2.7
16	-----	2.75	2.7	2.7	2.95	3.3	3.15	3.1	3.3	3.0	2.7	2.7
17	-----	2.7	2.7	2.7	3.35	3.45	3.2	3.1	3.3	3.1	2.7	2.7
18	-----	2.7	2.7	2.7	3.4	3.4	3.1	3.1	3.3	3.1	2.7	2.7
19	-----	2.8	2.7	2.7	3.6	3.25	3.15	3.1	3.3	3.0	2.7	2.7
20	-----	2.9	2.7	2.7	3.8	3.1	3.05	3.1	3.3	3.0	2.7	2.7
21	-----	2.8	2.7	2.7	3.65	3.0	3.05	3.1	3.3	3.0	2.7	2.7
22	-----	2.7	2.7	2.7	3.45	3.0	3.05	3.1	3.3	3.0	2.7	2.7
23	-----	2.7	2.9	2.7	3.3	3.0	3.05	3.1	3.3	3.0	2.7	2.7
24	-----	2.7	2.9	2.7	3.15	2.9	3.05	3.1	3.3	2.9	2.7	2.7
25	-----	2.8	2.85	2.7	3.1	2.9	3.1	3.35	3.3	2.9	2.7	2.7
26	-----	2.8	2.8	2.7	3.0	2.9	3.1	3.25	3.3	2.9	2.7	2.7
27	-----	2.8	2.8	2.7	2.9	2.9	3.1	3.9	3.5	2.9	2.7	2.7
28	-----	2.8	2.75	2.7	2.9	2.9	3.1	3.65	3.45	2.8	2.7	2.7
29	-----	2.8	2.7	2.7	2.9	-----	3.1	3.45	3.4	2.8	2.85	2.7
30	-----	2.8	2.7	2.7	2.8	-----	3.1	3.3	3.4	2.8	2.8	2.7
31	-----	2.8	-----	2.7	2.8	-----	3.1	-----	3.4	-----	2.7	-----
1909-10.												
1	2.7	2.7	3.0	2.8	2.8	3.6	3.2	3.1	2.8	2.6	2.6	2.6
2	2.7	2.7	3.0	2.7	2.8	4.3	3.2	3.1	2.8	2.6	2.6	2.6
3	2.7	2.85	2.9	2.7	2.8	3.95	3.2	3.1	2.8	2.6	2.6	2.6
4	2.7	3.0	2.9	2.7	2.8	3.7	3.1	3.2	2.8	2.6	2.6	2.6
5	2.7	2.85	2.9	2.7	2.8	3.7	3.15	3.2	2.8	2.6	2.6	2.6
6	2.7	2.8	2.9	2.7	2.8	3.5	3.3	3.2	2.8	2.6	2.6	2.6
7	2.7	2.8	2.9	2.7	2.8	3.3	3.3	3.2	2.7	2.6	2.6	2.6
8	2.7	2.8	2.9	2.7	2.8	3.2	3.3	3.2	2.7	2.6	2.6	2.6
9	2.7	2.8	2.9	2.7	2.8	3.1	3.35	3.2	2.7	2.6	2.6	2.6
10	2.7	2.8	2.9	2.7	2.8	3.1	3.5	3.4	3.7	2.6	2.6	2.6
11	2.7	2.8	2.9	2.7	2.8	3.15	3.6	3.35	2.7	2.6	2.6	2.6
12	2.7	2.8	2.9	2.7	2.8	3.3	3.6	3.2	2.7	2.6	2.6	2.6
13	2.7	2.8	2.9	2.7	2.8	3.45	3.5	3.2	2.7	2.6	2.6	2.6
14	2.7	2.8	2.9	2.7	2.8	3.5	3.4	3.1	2.7	2.6	2.6	2.6
15	2.7	2.8	2.9	2.7	2.8	3.5	3.3	3.1	2.7	2.6	2.6	2.6
16	2.7	2.8	2.9	2.7	2.8	3.55	3.2	3.1	2.75	2.6	2.6	2.65
17	2.7	2.8	2.8	2.7	2.8	3.65	3.35	3.1	2.75	2.6	2.6	2.6
18	2.7	3.1	2.8	2.7	2.8	3.7	3.45	3.1	2.7	2.6	2.6	2.6
19	2.7	2.95	2.8	2.7	2.8	3.75	3.65	3.1	2.7	2.6	2.6	2.6
20	2.7	2.8	2.8	2.7	2.8	4.45	3.75	3.0	2.7	2.6	2.6	2.6
21	2.7	2.8	2.8	2.7	2.8	3.95	3.45	2.9	2.7	2.6	2.6	2.6
22	2.7	3.65	2.8	2.75	2.8	3.9	3.45	2.9	2.7	2.6	2.6	2.6
23	2.7	3.6	2.8	3.05	2.8	3.85	3.6	2.9	2.7	2.6	2.6	2.6
24	2.7	3.35	2.7	3.3	3.05	3.6	3.65	2.8	2.7	2.6	2.6	2.6
25	2.7	3.3	2.7	3.1	3.1	3.4	3.5	2.9	2.6	2.6	2.6	2.6
26	2.7	3.25	2.7	2.8	3.0	3.4	3.4	2.9	2.6	2.6	2.6	2.6
27	2.7	3.1	2.7	2.8	3.0	3.3	3.3	2.9	2.6	2.6	2.6	2.6
28	2.7	3.05	2.7	2.8	3.15	3.2	3.3	2.9	2.6	2.6	2.6	2.6
29	2.7	3.0	2.7	2.9	-----	3.1	3.2	2.8	2.6	2.6	2.6	2.6
30	2.7	3.0	2.8	2.8	-----	3.1	3.2	2.8	2.6	2.6	2.6	2.6
31	2.7	-----	2.8	2.8	-----	3.1	-----	2.8	-----	2.6	-----	-----

Daily discharge, in second-feet, of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1906.			1906.			1906.		
1.....		120	11.....	120	122	21.....	120	.....
2.....		120	12.....	126	120	22.....	134	.....
3.....		120	13.....	130	130	23.....	130	.....
4.....		120	14.....	124	132	24.....	126	.....
5.....		120	15.....	124	130	25.....	124	.....
6.....		120	16.....	122	.....	26.....	124	.....
7.....		120	17.....	122	.....	27.....	120	.....
8.....		120	18.....	124	.....	28.....	120	.....
9.....		124	19.....	120	.....	29.....	120	.....
10.....	120	124	20.....	120	.....	30.....	120	.....
						31.....	120	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....				243	243	243	214	243	187	118	118	118
2.....				243	200	214	214	243	187	118	118	118
3.....				243	187	214	214	243	187	118	118	118
4.....				243	200	214	214	274	187	118	118	118
5.....				243	307	214	214	274	162	118	118	118
6.....				214	379	214	228	274	162	118	118	118
7.....				214	307	187	274	274	162	118	118	118
8.....				187	307	187	324	307	162	118	118	118
9.....				187	307	187	398	307	162	118	118	118
10.....				187	307	187	398	307	162	118	118	118
11.....				187	307	187	360	274	162	118	118	118
12.....				162	258	187	290	274	162	118	118	118
13.....				162	243	162	290	243	162	118	118	118
14.....				162	243	162	342	243	162	118	118	118
15.....				162	243	162	307	243	139	118	118	118
16.....				139	214	162	307	243	139	118	119	139
17.....				162	243	174	274	290	139	118	118	139
18.....				162	228	214	243	342	139	118	118	139
19.....				139	214	243	243	307	139	118	118	118
20.....				139	324	379	243	307	139	118	118	118
21.....				139	324	324	243	274	139	118	118	118
22.....				139	307	274	243	274	139	118	118	118
23.....				139	307	243	243	243	162	118	118	118
24.....				139	324	228	243	243	139	118	118	118
25.....				187	379	214	243	243	139	118	118	118
26.....				187	342	214	243	214	139	118	118	118
27.....				139	290	214	243	214	139	118	118	118
28.....				139	290	187	243	214	139	118	118	118
29.....				139	.....	187	243	214	139	118	118	118
30.....				139	.....	214	214	214	139	118	118	118
31.....				214	.....	228	.....	214	.....	118	118	.....

Daily discharge, in second-feet, of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	118	139	162	162	139	162						
2.....	118	139	162	162	139	162						
3.....	118	139	139	162	139	162						
4.....	118	139	139	162	139	162						
5.....	118	139	139	162	139	162						
6.....	118	139	139	162	139	139						
7.....	118	139	187	162	139	139						
8.....	118	139	187	162	139	139						
9.....	118	139	162	162	139	139						
10.....	118	139	162	162	139	139						
11.....	118	139	162	162	139	162						
12.....	118	139	162	162	139	187						
13.....	118	139	187	162	139	228						
14.....	118	139	187	139	139	274						
15.....	118	139	162	139	139							
16.....	118	139	162	139	139							
17.....	118	139	162	139	162							
18.....	118	139	162	139	162							
19.....	118	139	139	162	162							
20.....	118	139	150	162	162							
21.....	118	139	187	162	162							
22.....	118	162	187	162	162							
23.....	118	187	187	162	162							
24.....	118	228	274	162	162							
25.....	118	200	228	162	162							
26.....	118	187	324	162	162							
27.....	118	162	258	162	187							
28.....	118	162	200	150	187							
29.....	118	162	187	139	187							
30.....	118	162	187	139								
31.....	139		187	139								
1908-9.												
1.....		147	126	126	147	170	224	302	286	147	126	126
2.....		147	126	126	147	170	224	371	286	147	126	126
3.....		147	126	126	147	196	224	318	286	147	126	126
4.....		147	126	126	147	224	224	318	286	147	126	126
5.....		126	126	126	147	224	224	318	254	147	126	126
6.....		126	126	126	147	196	224	318	254	147	126	126
7.....		126	126	126	147	196	224	318	254	147	126	126
8.....		126	126	126	147	196	224	286	254	147	126	126
9.....		126	126	126	147	196	224	286	254	147	126	126
10.....		126	126	126	147	196	224	286	224	147	126	126
11.....		126	126	126	147	196	224	286	224	147	126	126
12.....		126	126	126	147	196	224	286	224	147	126	126
13.....		126	126	126	147	196	224	286	224	126	126	126
14.....		170	126	126	147	196	224	286	196	126	126	126
15.....		147	126	126	126	170	224	224	286	196	126	126
16.....	136	126	126	183	286	239	224	286	196	126	126	126
17.....	126	126	126	302	335	254	224	286	224	126	126	126
18.....	126	126	126	318	318	224	224	286	224	126	126	126
19.....	147	126	126	390	270	239	224	286	196	126	126	126
20.....	170	126	126	470	224	210	224	286	196	126	126	126
21.....	147	126	126	410	196	210	224	286	196	126	126	126
22.....	126	126	126	335	196	210	224	286	196	126	126	126
23.....	126	170	126	286	196	210	224	286	196	126	126	126
24.....	126	170	126	239	170	210	224	286	170	126	126	126
25.....	147	158	126	224	170	224	302	286	170	126	126	126
26.....	147	147	126	196	170	224	270	286	170	126	126	126
27.....	147	147	126	170	170	224	510	352	170	196	126	126
28.....	147	136	126	170	170	224	410	335	147	254	126	126
29.....	147	126	126	170		224	335	318	147	158	126	126
30.....	147	126	126	147		224	286	318	147	147	126	126
31.....	147		126	147		224		318		126	126	

Daily discharge, in second-feet, of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	126	126	196	147	147	390	254	224	147	107	107	107
2.....	126	126	196	126	147	670	254	224	147	107	107	107
3.....	126	158	170	126	147	530	254	224	147	107	107	107
4.....	126	196	170	126	147	430	224	254	147	107	107	107
5.....	126	158	170	126	147	430	239	254	147	107	107	107
6.....	126	147	170	126	147	352	286	254	147	107	107	107
7.....	126	147	170	126	147	286	286	254	126	107	107	107
8.....	126	147	170	126	147	254	286	254	126	107	107	107
9.....	126	147	170	126	147	224	302	254	126	107	107	107
10.....	126	147	170	126	147	224	352	318	126	107	107	107
11.....	126	147	170	126	147	239	390	302	126	107	107	107
12.....	126	147	170	126	147	286	390	254	126	107	107	107
13.....	126	147	170	126	147	335	352	254	126	107	107	107
14.....	126	147	170	126	147	352	318	224	126	107	107	107
15.....	126	147	170	126	147	352	286	224	126	107	107	107
16.....	126	147	170	126	147	371	254	224	136	107	107	116
17.....	126	147	147	126	147	410	302	224	136	107	107	107
18.....	126	224	147	126	147	430	335	224	126	107	107	107
19.....	126	183	147	126	147	450	410	224	126	107	107	107
20.....	126	147	147	126	147	735	450	196	126	107	107	107
21.....	126	147	147	126	147	530	335	170	126	107	107	107
22.....	126	410	147	136	147	510	335	170	126	107	107	107
23.....	126	390	147	210	147	490	390	170	126	107	107	107
24.....	126	302	126	286	210	390	410	147	126	107	107	107
25.....	126	286	126	224	224	318	352	170	107	107	107	107
26.....	126	270	126	147	196	318	318	170	107	107	107	107
27.....	126	224	126	147	196	286	286	170	107	107	107	107
28.....	126	210	126	147	239	254	286	170	107	107	107	107
29.....	126	196	126	170	.....	224	254	147	107	107	107	107
30.....	126	196	147	147	.....	224	254	147	107	107	107	107
31.....	126	.....	147	147	.....	224	.....	147	.....	107	107	.....

NOTE.—Daily discharge determined as follows:

1906. Aug. 10 to Sept. 15, from well defined rating curve.

1907 to 1910. Jan. 1, 1907, to Mar. 14, 1908, from curve well defined below 200 second-feet; Oct. 14, 1908, to Sept. 30, 1910, from curve well defined below 400 second-feet.

Monthly discharge of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
August 10-31.....	134	120	123	5,370	A.
September 1-15.....	132	120	123	3,660	A.
1907.					
January.....	243	139	177	10,900	A.
February.....	379	187	279	15,500	B.
March.....	379	162	214	13,200	B.
April.....	398	214	266	15,800	B.
May.....	342	214	260	16,000	B.
June.....	187	139	153	9,100	A.
July.....	118	118	118	7,260	A.
August.....	118	118	118	7,260	A.
September.....	139	118	120	7,140	A.
The period.....				102,000	
1907-8.					
October.....	139	118	119	7,320	A.
November.....	228	139	151	8,980	A.
December.....	324	139	181	11,100	A.
January.....	162	139	156	9,590	A.
February.....	187	139	152	8,740	A.
March 1-14.....	274	139	168	4,660	A.
The period.....				50,400	

Monthly discharge of South Fork of Walla Walla River above Pacific Power & Light Co.'s intake near Milton, Oreg., for 1906-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October 14-31	170	126	143	5, 100	A.
November.....	170	126	135	8, 030	A.
December.....	126	126	126	7, 750	A.
January.....	470	126	195	12, 000	A.
February.....	335	147	182	10, 100	A.
March.....	254	170	211	13, 000	A.
April.....	510	224	250	14, 900	A.
May.....	371	286	301	18, 500	A.
June.....	286	147	215	12, 800	A.
July.....	254	126	142	8, 730	A.
August.....	126	126	126	7, 750	A.
September.....	126	126	126	7, 500	A.
The period.....				126, 000	
1909-10.					
October.....	126	126	126	7, 750	A.
November.....	410	126	190	11, 300	A.
December.....	196	126	156	9, 590	A.
January.....	286	126	143	8, 790	A.
February.....	239	147	159	8, 830	A.
March.....	735	224	372	22, 900	A.
April.....	450	224	315	18, 700	A.
May.....	318	147	214	13, 200	A.
June.....	147	107	127	7, 560	A.
July.....	107	107	107	6, 580	A.
August.....	107	107	107	6, 580	A.
September.....	107	107	107	6, 370	A.
The year.....	735	107	177	128, 000	

WALLA WALLA RIVER AT MILTON, OREG.

Location.—In sec. 11, T. 5 N., R. 35 E., about 1 mile south of post office in town of Milton.

Records presented.—February 13, 1903, to September 30, 1905.

Drainage area.—130 square miles.

Gage.—Vertical staff.

Channel.—Gravel; shifting.

Discharge measurements.—Made at county bridge one-half mile below gage, except as noted.

Diversions.—A ditch diverts water between the gage and the bridge from which measurements are made. The measured discharge of the ditch has been added to that of the river in the following list.

Accuracy.—Conditions at this station poor and estimates generally uncertain, especially after about July 1, 1904, when the discharge relation was affected by backwater from a diversion dam below the gage.

Discharge measurements of Walla Walla River at Milton, Oreg., in 1903-1905.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Fect.</i>	<i>Sec.-ft.</i>	1904.		<i>Fect.</i>	<i>Sec.-ft.</i>
Feb. 13 ^a	T. A. Noble.....	1.11	247	Apr. 16	H. A. Yates.....	2.5	1,390
13	do.....	1.11	205	May 14	Murphy and Sawyer...	1.93	715
May 28	F. W. Huber.....	1.40	388	June 13	W. C. Sawyer.....	1.37	267
June 24	J. H. Lewis.....	.98	171	Aug. 12	do.....	1.01	139
Sept. 8 ^a	do.....	1.05	152	Oct. 20	do.....	1.05	145
8	do.....	1.05	167				
Oct. 29 ^a	Lewis and Yates.....	1.03	144	1905.			
29	do.....	1.03	139	Feb. 8	W. C. Sawyer.....	1.71	190
Dec. 28	H. A. Yates.....	1.15	224	Mar. 18	H. A. Yates.....	1.85	240
28	J. H. Lewis.....	1.15	216	May 5	J. H. Lewis.....	1.75	378
28 ^a	do.....	1.15	237	July 21	W. C. Sawyer.....	1.64	98
				Aug. 11	Sawyer and Lewis.....	1.42	90
				Sept. 1	Sawyer and Cupper....	1.37	95

^a Measurement made from a cable at the gage.

NOTE.—The diversion ditch carried water as follows: Feb. 13, 1903, 1.5 second-feet; May 14, 1904, 26 second-feet; June 13 and Aug. 12, 1904, 40 second-feet; Feb. 8, 1905, 78 second-feet; Mar. 18, 64 second-feet; May 5, 77 second-feet; July 21 and Aug. 11, 52 second-feet; and Sept. 1, 1905, 53 second-feet.

Daily gage height, in feet, of Walla Walla River at Milton, Oreg., for 1903-1905.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1						1.11	1.89	1.55	1.45	1.08	0.96	0.95
2						1.11	1.74	1.55	1.44	1.13	.96	.94
3						1.11	1.61	1.55	1.37	1.10	.95	.94
4						1.11	1.54	1.60	1.32	1.07	.95	.94
5						1.10	1.47	1.67	1.28	1.18	.95	.94
6						1.09	1.41	1.70	1.24	1.13	.95	.98
7						1.09	1.38	1.67	1.21	1.12	.94	1.07
8						1.11	1.38	1.64	1.20	1.11	.94	1.05
9						1.10	1.42	1.58	1.19	1.11	.94	1.00
10						1.10	1.39	1.56	1.17	1.09	.94	1.08
11						1.10	1.35	1.54	1.14	1.07	.93	1.22
12						1.10	1.32	1.57	1.14	1.06	.93	1.23
13						1.07	1.32	1.65	1.18	1.05	.93	1.47
14						1.06	1.32	1.70	1.14	1.04	.92	1.37
15					1.08	1.05	1.32	1.60	1.11	1.04	.92	1.26
16					1.07	1.06	1.35	1.56	1.11	1.04	.93	1.19
17					1.07	1.06	1.41	1.49	1.10	1.02	.93	1.14
18					1.07	1.07	1.42	1.46	1.07	1.01	.93	1.10
19					1.07	1.06	1.40	1.43	1.04	1.02	.92	1.06
20					1.07	1.06	1.43	1.39	1.04	1.02	.91	1.04
21					1.07	1.24	1.53	1.35	1.02	.99	.91	1.02
22					1.08	1.28	1.65	1.34	1.05	.97	.92	1.01
23					1.10	1.29	1.67	1.33	1.03	.97	.93	1.00
24					1.10	1.34	1.70	1.32	1.02	.91	.93	.99
25					1.11	1.44	1.73	1.35	1.01	.92	.94	.99
26					1.11	1.48	1.83	1.38	1.10	.92	1.05	.99
27					1.11	1.52	1.76	1.38	1.08	.91	1.17	.98
28					1.11	1.86	1.64	1.40	1.14	.91	1.02	.96
29						2.23	1.55	1.40	1.12	.96	.97	.96
30						2.01	1.57	1.40	1.10	.95	.97	.96
31						2.00		1.42		.96	.96	

Daily gage height, in feet, of Walla Walla River at Milton, Oreg., for 1903-1905—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	0.96	1.01	1.21	1.04	0.96	1.33	1.91	1.80	1.58	1.23	1.11	1.33
2.....	.96	1.03	1.22	1.04	.96	1.36	1.90	1.72	1.68	1.22	1.11	1.33
3.....	.96	1.04	1.23	1.04	.96	1.28	1.93	1.81	1.68	1.21	1.11	1.32
4.....	1.02	1.05	1.20	1.03	.95	1.33	1.95	1.92	1.67	1.30	1.10	1.32
5.....	1.26	1.08	1.17	1.02	.95	1.30	1.88	1.88	1.65	1.30	1.20	1.31
6.....	1.62	1.10	1.12	1.00	.96	1.47	2.10	1.86	1.63	1.28	1.20	1.30
7.....	1.37	1.25	1.08	1.02	.95	1.85	1.95	1.81	1.65	1.32	1.21	1.30
8.....	1.27	1.19	.95	1.03	.95	3.20	1.90	1.78	1.58	1.30	1.21	1.30
9.....	1.21	1.21	.96	1.02	.95	2.66	1.95	1.74	1.53	1.27	1.21	1.30
10.....	1.18	1.24	.98	1.10	.92	2.20	2.31	1.98	1.50	1.26	1.20	1.30
11.....	1.18	1.24	.99	1.07	.92	2.02	2.60	2.00	1.47	1.24	1.21	1.29
12.....	1.11	1.27	.97	1.22	1.01	1.90	2.92	1.96	1.43	1.23	1.21	1.29
13.....	1.10	1.31	1.00	1.50	.99	1.75	2.93	1.97	1.38	1.22	1.20	1.28
14.....	1.08	1.56	.96	1.45	.97	1.73	3.20	1.98	1.37	1.21	1.30	1.27
15.....	1.07	1.57	.98	1.43	1.03	1.85	3.00	1.95	1.35	1.25	1.30	1.24
16.....	1.06	1.44	1.56	1.38	1.45	1.80	2.51	1.90	1.34	1.30	1.31	1.24
17.....	1.05	1.35	1.61	1.36	1.43	1.74	2.43	1.90	1.36	1.24	1.31	1.24
18.....	1.05	1.32	1.49	1.33	1.30	1.70	2.31	1.92	1.36	1.22	1.30	1.24
19.....	1.03	1.29	1.40	1.30	1.20	1.74	2.45	2.01	1.35	1.21	1.31	1.24
20.....	1.02	1.33	1.43	1.16	1.22	1.84	2.55	2.02	1.35	1.20	1.32	1.23
21.....	1.01	1.62	1.45	1.15	1.15	1.76	2.33	2.03	1.34	1.19	1.30	1.23
22.....	1.01	1.85	1.50	1.21	1.45	1.72	2.21	2.02	1.32	1.18	1.30	1.23
23.....	.99	1.61	1.47	1.19	1.47	1.69	2.08	2.02	1.25	1.17	1.31	1.34
24.....	.98	1.47	1.37	1.15	1.44	1.65	2.01	2.01	1.22	1.17	1.30	1.34
25.....	.97	1.25	1.30	1.13	1.37	1.54	1.92	1.84	1.20	1.15	1.30	1.30
26.....	.96	1.20	1.23	1.10	1.40	1.50	2.05	1.78	1.18	1.14	1.31	1.35
27.....	.95	1.26	1.20	1.07	1.45	1.47	2.11	1.72	1.16	1.13	1.30	1.31
28.....	.98	1.20	1.16	1.04	1.40	1.54	2.18	1.67	1.27	1.13	1.31	1.30
29.....	1.03	1.20	1.11	1.02	1.36	1.95	2.08	1.62	1.26	1.12	1.31	1.30
30.....	1.02	1.19	1.08	1.00	.....	2.21	2.18	1.61	1.24	1.12	1.32	1.30
31.....	1.02	.....	1.05	.98	.....	1.98	.....	1.60	.....	1.11	1.32	.....
1904-5.												
1.....	1.31	1.38	1.55	1.74	1.54	1.81	1.70	1.65	1.55	1.94	1.48	1.40
2.....	1.30	1.39	1.55	1.69	1.51	1.80	1.78	1.62	1.55	1.88	1.46	1.39
3.....	1.28	1.39	1.55	1.56	1.52	1.80	1.76	1.70	2.11	1.88	1.45	1.40
4.....	1.29	1.40	1.57	1.56	1.74	1.80	1.75	1.72	2.06	1.86	1.44	1.41
5.....	1.30	1.40	1.56	1.56	1.74	1.79	1.74	1.72	2.03	1.84	1.43	1.41
6.....	1.30	1.48	1.54	1.53	1.72	1.78	1.73	1.72	2.00	1.82	1.40	1.41
7.....	1.32	1.48	1.56	1.48	1.72	1.76	1.75	1.67	1.97	1.78	1.36	1.41
8.....	1.32	1.48	1.57	1.45	1.71	1.75	1.78	1.66	1.95	1.68	1.36	1.40
9.....	1.31	1.49	1.54	1.48	1.71	1.74	1.78	1.86	1.92	1.58	1.36	1.40
10.....	1.31	1.51	1.52	1.50	1.71	1.78	1.80	1.92	1.90	1.50	1.36	1.41
11.....	1.36	1.50	1.54	1.51	1.68	1.81	1.74	2.02	1.82	1.50	1.37	1.42
12.....	1.41	1.52	1.55	1.52	1.66	1.82	1.67	1.99	1.78	1.73	1.37	1.43
13.....	1.36	1.52	1.54	1.51	1.64	1.84	1.68	1.93	1.74	1.70	1.36	1.45
14.....	1.34	1.53	1.58	1.49	1.62	1.84	1.69	1.85	1.72	1.70	1.37	1.46
15.....	1.40	1.54	1.57	1.50	1.61	1.84	1.66	1.80	1.70	1.66	1.38	1.46
16.....	1.39	1.55	1.56	1.51	1.61	1.83	1.66	1.75	1.70	1.65	1.40	1.45
17.....	1.37	1.56	1.55	1.50	1.70	1.84	1.64	1.73	1.72	1.63	1.46	1.45
18.....	1.36	1.57	1.57	1.51	1.74	1.84	1.66	1.71	1.64	1.62	1.44	1.45
19.....	1.35	1.57	1.58	1.49	1.80	1.84	1.66	1.68	1.57	1.60	1.43	1.45
20.....	1.35	1.60	1.58	1.53	1.79	1.84	1.70	1.64	1.64	1.62	1.42	1.46
21.....	1.36	1.60	1.59	1.51	1.76	1.95	1.80	1.62	1.64	1.64	1.43	1.46
22.....	1.36	1.59	1.58	1.51	1.72	1.98	1.94	1.60	1.80	1.63	1.43	1.46
23.....	1.36	1.58	1.57	1.59	1.80	1.95	1.88	1.59	1.85	1.62	1.43	1.46
24.....	1.97	1.56	1.57	1.76	1.88	2.13	1.91	1.63	2.06	1.61	1.42	1.47
25.....	1.36	1.56	1.56	1.80	1.97	2.01	1.95	1.65	2.12	1.58	1.42	1.47
26.....	1.35	1.55	1.56	1.76	1.87	2.12	1.91	1.65	2.10	1.45	1.41	1.48
27.....	1.35	1.54	1.55	1.73	1.84	2.05	1.88	1.65	2.06	1.49	1.41	1.60
28.....	1.34	1.53	1.55	1.71	1.82	1.91	1.85	1.64	2.04	1.50	1.41	1.60
29.....	1.34	1.54	1.60	1.68	.....	1.81	1.70	1.62	2.02	1.50	1.42	1.58
30.....	1.37	1.55	1.78	1.66	.....	1.81	1.69	1.60	1.95	1.48	1.42	1.56
31.....	1.37	.....	1.80	1.60	.....	1.72	.....	1.58	.....	1.46	1.41	.....

NOTE.—Daily gage heights for June 28 to Dec. 31, 1904, are here given as actually observed; those published in Water-Supply Paper 135 were arbitrarily corrected for the estimated effects of a diversion dam below the gage.

Daily discharge, in second-feet, of Walla Walla River at Milton, Oreg., for 1903-1905.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1.						225	868	505	425	183	128	125
2.						225	694	505	418	198	128	122
3.						225	660	505	372	180	125	122
4.						225	496	550	342	166	125	122
5.						220	439	620	318	202	125	122
6.						216	397	650	294	182	125	134
7.						216	378	620	276	178	122	161
8.						225	378	590	270	174	122	155
9.						220	404	532	265	174	122	140
10.						220	384	514	255	167	122	164
11.						220	360	496	240	161	119	220
12.						220	342	523	240	158	119	225
13.						208	342	600	260	155	119	369
14.						204	342	650	240	152	116	302
15.					212	200	342	550	225	152	116	240
16.					208	204	360	514	225	152	119	206
17.					208	204	397	453	220	146	119	186
18.					208	208	404	432	208	143	119	170
19.					208	204	390	411	196	146	116	158
20.					208	204	411	384	196	146	113	152
21.					208	294	487	360	188	137	113	146
22.					212	318	600	354	200	131	116	143
23.					220	324	620	348	192	131	119	140
24.					220	354	650	342	188	113	119	137
25.					225	418	683	360	184	116	122	137
26.					225	446	796	378	215	116	155	137
27.					225	478	716	378	202	113	198	134
28.					225	832	590	390	224	113	146	128
29.						1,280	505	390	209	128	131	128
30.						1,010	514	390	195	125	131	128
31.						1,000		404		128	128	
1903-4.												
1.	128	143	256	176	144	331	690	577	394	168	137	142
2.	128	149	262	176	144	352	679	505	472	165	137	142
3.	128	152	268	176	144	298	714	587	472	162	137	139
4.	146	155	250	172	140	331	736	701	463	192	135	139
5.	240	164	235	168	140	310	658	658	447	192	135	137
6.	488	170	210	160	144	436	913	637	431	185	135	135
7.	302	235	192	168	140	820	736	587	447	200	137	135
8.	245	206	140	172	140	2,220	679	559	394	192	137	135
9.	215	215	144	168	140	1,580	736	522	359	181	137	135
10.	202	230	152	200	128	1,030	1,160	771	339	178	135	135
11.	202	230	156	188	128	819	1,510	795	321	171	137	133
12.	174	245	148	262	164	679	1,890	748	298	168	137	133
13.	170	266	160	460	156	531	1,900	760	271	165	135	131
14.	164	438	144	420	148	514	2,220	771	266	162	135	130
15.	161	446	152	404	172	626	1,980	736	256	174	135	125
16.	158	348	514	366	420	577	1,400	679	251	192	137	125
17.	155	290	560	352	404	522	1,300	679	261	171	137	125
18.	155	272	452	331	310	488	1,160	701	261	165	135	125
19.	149	255	380	310	250	522	1,330	807	256	162	137	125
20.	146	278	404	230	262	616	1,450	819	256	159	139	124
21.	143	488	420	225	225	540	1,180	830	251	156	135	124
22.	143	820	460	256	420	505	1,040	819	242	154	135	124
23.	137	560	436	245	436	480	889	819	212	151	137	144
24.	134	436	359	225	412	447	807	807	200	151	135	144
25.	131	280	310	215	359	365	702	616	192	146	135	135
26.	128	250	268	200	380	339	854	559	185	144	137	146
27.	125	286	250	188	420	321	925	505	178	142	135	137
28.	134	250	230	176	380	365	1,010	463	181	142	137	135
29.	149	250	205	168	352	736	889	424	178	139	137	135
30.	146	245	192	160		1,040	1,010	416	171	139	139	135
31.	146		180	152		771		408		137	139	

Daily discharge, in second-feet, of Walla Walla River at Milton, Oreg., for 1903-1905—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	137	154	181	255	180	230	245	315	245	225	145	100
2.....	135	156	181	235	170	225	285	295	245	195	100	100
3.....	131	156	181	185	170	225	280	345	280	165	99	100
4.....	133	159	188	185	200	225	290	360	245	165	98	101
5.....	135	159	185	185	200	220	295	360	240	165	145	101
6.....	135	159	178	175	195	215	300	360	240	165	98	101
7.....	139	159	185	160	195	210	325	325	210	160	97	101
8.....	139	159	188	150	190	205	360	320	205	160	97	100
9.....	137	162	178	160	190	200	375	465	205	110	97	100
10.....	137	168	171	165	190	215	390	510	175	160	97	101
11.....	149	165	178	170	175	230	380	610	175	110	98	102
12.....	162	171	181	170	170	235	325	580	175	110	98	102
13.....	149	171	178	170	160	245	335	525	145	110	97	104
14.....	144	174	192	160	155	245	340	455	235	110	98	105
15.....	159	178	188	165	150	245	320	415	200	110	99	105
16.....	156	181	185	170	150	240	320	380	235	107	100	104
17.....	151	185	181	165	185	245	310	365	235	107	104	104
18.....	149	188	188	170	200	245	320	350	235	107	103	104
19.....	146	188	192	160	225	245	320	335	200	106	102	104
20.....	146	200	192	175	220	245	345	310	200	106	102	105
21.....	149	200	196	170	210	295	415	295	170	106	102	105
22.....	149	196	192	170	195	310	535	285	170	105	102	105
23.....	149	188	188	195	225	295	480	280	200	105	102	105
24.....	151	185	188	265	260	390	505	305	230	105	102	105
25.....	149	185	185	280	305	325	540	315	230	105	102	105
26.....	146	181	185	265	255	410	505	315	230	105	101	106
27.....	146	178	181	250	245	380	485	315	230	105	101	114
28.....	144	174	181	245	235	305	455	310	230	100	101	114
29.....	144	178	200	230	.....	260	345	295	225	150	102	113
30.....	151	181	281	225	.....	270	340	285	225	100	102	112
31.....	151	.....	292	200	.....	235	.....	275	.....	150	101	.....

NOTE.—Daily discharge determined as follows: Feb. 15 to June 25, 1903, from fairly well defined rating curve; June 26 to July 4, by indirect method for shifting channel; July 5 to Nov. 21, 1903, Nov. 22, 1903, to Mar. 7, 1904, and Mar. 8 to June 27, 1904, from three fairly well defined rating curves; June 28, 1904, to Sept. 30, 1905, by indirect method for shifting channel and a series of short-period curves.

Monthly discharge of Walla Walla River at Milton, Oreg., for 1903-1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Ac- cu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
February 15-28.....	225	208	215	5,970	B.
March.....	1,280	200	356	21,900	B.
April.....	868	342	498	29,600	B.
May.....	650	342	474	29,100	B.
June.....	425	184	249	14,800	C.
July.....	202	113	151	9,280	C.
August.....	198	113	126	7,750	C.
September.....	369	122	165	9,820	B.
The period.....	.....	.....	.....	128,000	
1903-4.					
October.....	488	125	173	10,600	B.
November.....	820	143	292	17,400	C.
December.....	560	140	274	16,800	B.
January.....	460	152	234	14,400	B.
February.....	436	128	248	14,300	C.
March.....	2,220	208	629	38,700	C.
April.....	2,220	658	.....	65,800	B.
May.....	830	408	.....	40,200	B.
June.....	472	171	.....	17,700	B.
July.....	200	137	.....	10,100	B.
August.....	139	135	.....	8,360	B.
September.....	146	124	.....	7,970	B.
The year.....	2,220	124	361	262,000	

Monthly discharge of Walla Walla River at Milton, Oreg., for 1903-1905—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
October.....	162	131	145	8,920	B.
November.....	200	154	175	10,400	B.
December.....	232	171	192	11,800	C.
January.....	280	150	194	11,900	C.
February.....	305	150	200	11,100	B.
March.....	410	200	260	16,000	B.
April.....	540	245	369	22,000	C.
May.....	610	275	363	22,300	C.
June.....	280	170	216	12,800	C.
July.....	225	100	129	7,930	C.
August.....	145	97	103	6,330	C.
September.....	114	100	104	6,190	C.
The year.....	610	97	204	148,000	

WALLA WALLA RIVER ABOVE MILTON, OREG.

Location.—About sec. 14, T. 5 N., R. 35 E., at old city reservoir $1\frac{1}{2}$ miles above Milton and about half a mile above the station known as Walla Walla River at Milton.

Records presented.—August 12, 1905, to May 29, 1906.

Gage.—Vertical staff on left bank.

Channel.—Gravel; practically permanent during period covered by records.

Discharge measurements.—Made from cable.

Accuracy.—Conditions good; estimates probably reliable.

Discharge measurements of Walla Walla River above Milton, Oreg., in 1905-6.

Date.	Hydrographer.	Gage height.	Dis- charge.	Date.	Hydrographer.	Gage height.	Dis- charge.
1905.		<i>Fect.</i>	<i>Sec.-ft.</i>	1906.		<i>Fect.</i>	<i>Sec.-ft.</i>
Aug. 12	Lewis and Sawyer.....	3.83	103	Feb. 19	R. S. Hall.....	4.62	413
Sept. 6	W. C. Sawyer.....	3.85	104	Mar. 23	Copper and Buchanan.	4.11	181
Oct. 6	P. A. Copper.....	3.95	133	May 22	P. A. Copper.....	4.13	187
Oct. 21	.....do.....	3.95	129	June 28 ^a	.....do.....	.....	186
Nov. 21	.....do.....	3.98	132	July 21 ^a	.....do.....	.....	112
Dec. 28	.....do.....	4.05	173	Aug. 4 ^a	.....do.....	.....	99

^a Measured by wading at mouth of Couse Creek.

Daily gage height, in feet, of Walla Walla River above Milton, Oreg., for 1905-6.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
1.....		3.88	3.92	4.0	4.02	4.02	4.28	4.38	4.70	4.45
2.....		3.82	3.92	4.0	4.1	4.00	4.28	4.32	4.60	4.45
3.....		3.82	3.9	3.98	4.22	4.00	4.20	4.28	4.60	4.48
4.....		3.85	3.9	4.0	4.25	4.02	4.20	4.28	4.60	4.45
5.....		3.85	3.92	3.98	4.22	4.10	4.18	4.22	4.60	4.35
6.....		3.85	3.98	3.98	4.2	4.22	4.15	4.22	4.62	4.35
7.....		3.85	4.0	3.98	4.2	4.32	4.10	4.25	4.62	4.30
8.....		3.85	4.0	3.95	4.2	4.30	4.10	4.30	4.65	4.30
9.....		3.85	3.98	3.95	4.18	4.22	4.08	4.38	4.70	4.30
10.....		3.82	3.95	4.0	4.12	4.20	4.08	4.38	4.60	4.30
11.....		3.85	3.95	3.98	4.12	4.20	4.08	4.35	4.55	4.30
12.....	3.82	3.88	3.92	3.95	4.08	4.18	4.05	4.32	4.45	4.30
13.....	3.85	3.9	3.9	3.95	4.05	4.22	4.02	4.25	4.42	4.25
14.....	3.88	3.9	3.9	3.95	4.02	4.22	4.02	4.22	4.48	4.25
15.....	3.88	3.9	3.98	3.95	4.02	4.20	4.05	4.22	4.50	4.28
16.....	3.9	3.9	3.95	3.92	4.02	4.28	4.05	4.20	4.58	4.22
17.....	3.88	3.9	3.98	3.95	4.15	4.22	4.05	4.15	4.55	4.15
18.....	3.85	3.9	3.98	3.98	4.18	4.20	4.20	4.12	4.52	4.25
19.....	3.88	3.9	3.98	4.0	4.2	4.18	4.60	4.10	4.52	4.25
20.....	3.85	3.9	3.98	4.0	4.15	4.12	4.60	4.10	4.52	4.12
21.....	3.88	3.9	3.9	3.98	4.15	4.10	4.60	4.10	4.62	4.13
22.....	3.88	3.88	3.95	3.98	4.12	4.12	4.55	4.10	4.70	4.12
23.....	3.85	3.88	3.98	3.95	4.10	4.18	4.45	4.10	4.65	4.13
24.....	3.85	3.88	4.0	3.95	4.08	4.40	4.42	4.25	4.60	4.12
25.....	3.88	3.88	4.05	3.95	4.08	4.50	4.38	4.30	4.52	4.10
26.....	3.88	3.9	4.1	4.12	4.08	4.45	4.35	4.32	4.48	4.12
27.....	3.88	3.95	4.0	4.12	4.08	4.40	4.40	4.62	4.45	4.13
28.....	3.85	3.98	4.0	4.08	4.05	4.32	4.40	4.62	4.45	4.12
29.....	3.88	3.92	3.98	4.02	4.05	4.30	.....	4.58	4.45	5.90
30.....	3.88	3.92	4.0	4.05	4.05	4.28	.....	4.60	4.45	(a)
31.....	3.9	.....	4.0	.....	4.05	4.25	.....	4.72	.....	.....

a Gage and cable washed away by flood.

Daily discharge, in second-feet, of Walla Walla River above Milton, Oreg., for 1905-6.

Day.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
1.....		115	125	147	153	150	243	288	469	323
2.....		99	125	147	175	144	243	260	406	323
3.....		99	120	142	214	144	210	243	406	339
4.....		107	120	147	224	150	210	243	406	323
5.....		107	125	142	214	175	203	218	406	274
6.....		107	142	142	207	218	192	218	419	274
7.....		107	147	142	207	260	175	230	419	251
8.....		107	147	134	207	251	175	251	438	251
9.....		107	142	134	201	218	169	288	469	251
10.....		99	134	147	181	210	169	288	406	251
11.....		107	134	142	181	210	169	274	377	251
12.....	99	115	125	134	169	203	160	260	323	251
13.....	107	120	120	134	161	218	150	230	307	230
14.....	115	120	120	134	153	218	150	218	339	230
15.....	115	120	142	134	153	210	160	218	349	243
16.....	120	120	134	125	153	243	160	210	395	218
17.....	115	120	142	134	191	218	160	193	377	192
18.....	107	120	142	142	201	210	210	182	360	230
19.....	115	120	142	147	207	203	406	175	360	230
20.....	107	120	142	147	191	182	406	175	360	182
21.....	115	120	120	142	191	175	406	175	419	186
22.....	115	115	134	142	181	182	377	175	469	182
23.....	107	115	142	134	175	203	323	175	438	186
24.....	107	115	147	134	169	297	307	230	406	182
25.....	115	115	161	134	169	349	288	251	360	175
26.....	115	120	175	181	169	323	274	260	339	182
27.....	115	134	147	181	169	297	297	419	323	186
28.....	107	142	147	169	161	260	297	419	323	182
29.....	115	125	142	153	161	251	.....	395	323	1,370
30.....	115	125	147	161	161	243	.....	406	323	.....
31.....	120	.....	147	.....	161	230	.....	482	.....	.....

NOTE.—Daily discharge determined as follows: 1905, from rating curve well defined below 150 second-feet; 1906, from curve well defined below 200 second-feet.

Monthly discharge of Walla Walla River above Milton, Oreg., for 1905-6.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
August 12-31.....	120	99	112	4,440	A.
September.....	142	99	115	6,840	A.
October.....	175	120	138	8,480	A.
November.....	181	125	144	8,570	A.
December.....	224	153	181	11,100	A.
January.....	349	144	221	13,600	A.
February.....	406	150	239	13,300	A.
March.....	482	175	260	16,000	B.
April.....	469	307	384	22,800	B.
May 1-29.....	1,370	175	274	15,800	B.
The period.....				121,000	

WALLA WALLA RIVER NEAR MILTON, OREG.

Location.—About sec. 24, T. 5 N., R. 35 E., at Jewell West bridge, 3 miles above Milton.

Records presented.—Discharge measurements only, August 29, 1906, to October 15, 1908.

Drainage area.—Not measured.

Gage.—Vertical staff fastened to right abutment of bridge.

Channel.—Sand and gravel; shifting.

Discharge measurements.—Made from bridge.

Diversions.—A small ditch heads just above the station.

Accuracy.—Gage heights questionable; rating uncertain; publication of results not warranted.

Discharge measurements of Walla Walla River at Jewell West bridge, near Milton, Oreg., in 1906 and 1908.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Fect.</i>	<i>Sec.-ft.</i>	1908.		<i>Fect.</i>	<i>Sec.-ft.</i>
Aug. 29	P. A. Cupper.....	1.63	97	Oct. 15	L. R. Allen.....	1.61	185
Dec. 11	H. D. McGlashan.....	2.20	300				

UMATILLA RIVER BASIN.

GENERAL FEATURES.

Umatilla River rises in the northeastern corner of Umatilla County, Oreg., flows generally westward a distance of 80 miles, and unites with Columbia River at the town of Umatilla. The area above the town of Pendleton spreads out in fan shape, including the western slope of the Blue Mountains for a distance of about 70 miles.

The principal tributaries are Birch, McKay, and Meacham creeks. The drainage area measures 2,160 square miles at the mouth of the river, 640 square miles at Pendleton, and 353 square miles at Gibbon.

The mean annual rainfall ranges from about 30 inches on the summit of the Blue Mountains to 9 inches at the mouth of the stream, being 14 inches at Pendleton and 25 inches at Weston on the divide between Umatilla and Walla Walla rivers. The headwater regions of the stream are heavily forested, but downstream the forests give place to rolling table-lands devoted to the production of wheat. The immediate valley of the river has been irrigated for many years, and the entire low-water flow of the stream is appropriated for irrigation. The United States Reclamation Service has completed a project to irrigate about 20,000 acres near Hermiston, and has begun work on the West Extension, which will water about 30,000 acres along the Columbia River near Irrigon. The soil of this portion of the drainage basin is sandy and the climatic conditions are favorable for the production of fruit. The highest run-off since records have been kept occurred in 1900 and the lowest in 1905.

UMATILLA RIVER AT GIBBON, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 36, T. 3 N., R. 35 E., on the Umatilla Indian Reservation, 1 mile below Gibbon railroad station, about $1\frac{1}{2}$ miles below the mouth of Meacham Creek, and 2 miles above the mouth of Squaw Creek; above all diversions.

Records presented.—July 22, 1896, to December 31, 1899; April 15, 1900, to May 29, 1906; December 3, 1906, to March 31, 1907; September 13, 1907, to September 30, 1910.

Drainage area.—353 square miles.

Gage.—Vertical staff in two sections; datum unchanged since December 3, 1906. Gages at several locations and datums used during life of station.

Discharge measurements.—Made from a cable near the gage or, at low water, by wading. Several cables used.

Channel.—Gravel; likely to shift at each flood.

Winter flow.—Slightly affected by ice.

Artificial control.—No water stored or diverted above station.

Accuracy.—Results since October, 1904, good, except estimates of extreme high-water discharge, which are uncertain. Many of the records prior to May, 1904, are very uncertain on account of shifting conditions and lack of sufficient measurements.

Discharge measurements of Umatilla River at Gibbon, Oreg., in 1896-1898, 1902-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1896.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 16	C. C. Babb.....	0.90	103	Mar. 28	J. H. Lewis.....	2.50	979
Aug. 31	.....do.....	.90	84	Apr. 7	W. C. Sawyer.....	2.65	1,090
Oct. 23	.....do.....	.82	81	May 6	.....do.....	2.10	660
1897.				Aug. 5	.....do.....	1.10	58
May 5	C. C. Babb.....	4.10	2,140	Oct. 19	Sawyer and Hall.....	1.22	85
22	.....do.....	2.05	624	Dec. 2	R. S. Hall.....	1.39	160
27	.....do.....	1.36	448	1906.			
June 7	.....do.....	1.00	233	Feb. 1	R. S. Hall.....	1.80	351
12	.....do.....	.80	168	Mar. 14	.....do.....	1.85	415
July 5	.....do.....	1.16	265	Apr. 2	.....do.....	3.28	1,680
20	.....do.....	.59	118	Apr. 21	J. C. Stevens.....	2.80	1,310
Aug. 27	.....do.....	.30	83	May 26	R. S. Hall.....	1.40	203
1898.				June 6	.....do.....		1,390
May 7	Sydney Arnold.....	2.30	981	July 9	.....do.....		102
Oct. 8	.....do.....	.30	83	Dec. 3	Stevens and McGlashan	c 1.50	183
1902.				1907.			
July 21	Sydney Arnold.....	.90	130	Sept. 12	E. F. Kriegsman.....	.72	65
Oct. 29	.....do.....	a .65	106	1908.			
Dec. 20	.....do.....	1.60	381	Mar. 20	J. C. Stevens.....	2.33	1,530
1903.				June 6	H. D. McGlashan.....	.80	269
May 26	E. I. Davis.....	.90	466	Oct. 16	L. R. Allen.....	.32	120
July 5	J. H. Lewis.....	.49	164	1909.			
28	.....do.....	.40	104	Mar. 13	H. D. McGlashan.....	1.50	598
29	.....do.....	.40	91	Oct. 13	F. F. Henshaw.....	.00	58
Sept. 29	.....do.....	.50	95	1910.			
1904.				Mar. 13	L. R. Allen.....	3.54	2,470
Mar. 19	J. H. Lewis.....	1.85	1,180	Aug. 31	R. W. Davenport.....	.10	50.3
Apr. 14	Brainard and Saxton.....	5.63	5,720	Sept. 11	F. C. Ebert.....	.12	53.0
25	W. C. Sawyer.....	1.00	1,590	Oct. 11	R. H. Bolster.....	.11	51.6
Oct. 14	.....do.....	b 1.17	98				
1905.							
Mar. 3	J. H. Lewis.....	2.00	540				
10	W. C. Sawyer.....	1.75	410				

a On new gage; reading on gage used up to Oct. 28, probably 1.00.
 b Reading on a new gage.
 c New gage installed.

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1896.											
1.....	0.80	0.80	11.....	0.85	0.90	21.....	0.80	0.80			
2.....	.75	.80	12.....	.85	.90	22.....	0.85	.80			
3.....	.75	.80	13.....	.85	.85	23.....	.90	.80			
4.....	.90	.80	14.....	.85	.85	24.....	.85	.80			
5.....	.85	.80	15.....	.85	.85	25.....	.85	.80			
6.....	.85	.80	16.....	.80	.85	26.....	.85	.80			
7.....	.85	.80	17.....	.80	.80	27.....	.85	.80			
8.....	.85	.80	18.....	.80	.80	28.....	.85	.80			
9.....	.85	.80	19.....	.80	.80	29.....	.85	.80			
10.....	.85	.80	20.....	.80	.80	30.....	.80	.80			
						31.....	.80	.90			

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896-97.												
1.....	0.80	1.00	1.60	1.80	1.80	1.80	3.05	3.40	1.20	0.85	0.45	0.40
2.....	.80	1.00	1.60	1.75	2.00	2.00	3.05	3.40	1.15	1.05	.45	.35
3.....	.80	1.00	1.60	1.70	2.60	1.90	3.00	3.50	1.10	1.30	.45	.35
4.....	.80	1.10	2.05	1.70	2.80	1.90	3.00	3.75	1.10	1.20	.45	.35
5.....	.80	1.10	2.45	1.65	2.90	1.90	3.20	4.10	1.00	1.15	.45	.35
6.....	.80	1.00	2.40	1.65	2.90	1.80	3.40	4.30	1.00	1.10	.45	.50
7.....	.80	1.00	2.30	1.60	2.80	1.80	3.50	3.55	1.00	1.00	.45	.45
8.....	.80	2.30	2.20	1.60	2.50	1.70	3.70	3.20	1.00	.95	.45	.45
9.....	.80	1.90	2.20	1.60	2.40	1.70	4.10	3.00	.90	.90	.45	.40
10.....	.90	2.20	2.30	1.60	2.90	1.60	5.00	3.00	.85	.85	.45	.40
11.....	.90	1.90	2.35	1.55	2.80	1.55	4.90	3.10	.85	.80	.45	.40
12.....	.85	1.70	3.90	1.55	2.90	1.55	4.80	3.10	.80	.80	.45	.40
13.....	.85	1.70	3.80	1.55	3.10	1.50	4.60	3.20	.80	.75	.45	.35
14.....	.85	3.20	3.20	1.55	3.10	1.50	5.00	3.10	.80	.70	.45	.35
15.....	.85	4.10	2.80	1.55	2.95	1.50	5.35	3.05	1.10	.70	.40	.35
16.....	.80	4.00	2.55	1.50	2.80	1.60	5.40	3.00	1.25	.65	.40	.35
17.....	.80	4.00	2.40	1.50	2.50	1.70	5.90	3.15	1.15	.65	.40	.35
18.....	.85	3.80	2.30	1.50	2.40	1.70	5.90	2.90	1.10	.60	.40	.35
19.....	.85	3.45	2.25	1.70	2.20	1.70	5.30	2.60	1.00	.60	.35	.30
20.....	.85	3.00	2.20	1.65	2.20	1.65	4.40	2.40	.95	.60	.35	.30
21.....	.85	2.70	2.10	1.65	1.90	1.65	3.80	2.20	.95	.55	.35	.30
22.....	.85	2.45	.....	1.65	1.80	1.65	3.70	2.00	.90	.55	.35	.30
23.....	.80	2.30	2.05	1.65	1.65	1.60	3.70	1.80	.85	.50	.35	.30
24.....	.80	2.10	2.00	1.60	1.60	3.60	3.60	1.85	.85	.50	.35	.30
25.....	.80	2.05	1.90	1.60	1.50	6.00	3.60	1.50	.85	.50	.35	.30
26.....	.80	1.95	.....	1.60	1.60	4.90	4.40	1.35	1.00	.50	.35	.30
27.....	.85	1.80	1.90	1.60	1.60	4.10	4.40	1.25	.95	.45	.30	.35
28.....	.85	1.75	1.85	1.65	1.65	3.80	3.90	1.20	.90	.45	.30	.35
29.....	.85	1.65	.....	1.65	.....	3.60	3.60	1.20	.85	.45	.30	.35
30.....	.90	1.60	1.80	1.70	.....	3.35	3.50	1.20	.85	.45	.30	.35
31.....	1.15	.....	.....	1.75	.....	3.15	.....	1.20	.....	.45	.50	.....
1897-98.												
1.....	.35	.40	2.00	2.70	1.10	2.25	1.80	2.85	1.85	.55	.30	.20
2.....	.35	.40	1.90	2.50	1.30	2.35	2.30	2.75	1.70	.55	.25	.20
3.....	.35	.40	1.80	2.20	1.30	2.35	2.50	2.65	1.60	.55	.25	.20
4.....	.35	.40	1.70	2.00	1.70	2.50	2.60	2.45	1.50	.55	.25	.20
5.....	.35	.40	1.80	1.90	2.10	2.55	3.10	2.45	1.45	.50	.25	.20
6.....	.35	.40	2.00	2.10	2.40	2.55	3.15	2.30	1.40	.50	.25	.20
7.....	.35	.40	2.85	2.00	2.30	3.00	3.30	2.25	1.30	.50	.25	.20
8.....	.35	.45	2.90	2.00	2.15	3.10	3.30	2.15	1.30	.50	.25	.20
9.....	.35	.50	2.60	2.00	2.10	3.00	3.20	2.10	1.20	.45	.25	.20
10.....	.35	.80	2.60	1.90	2.10	2.60	3.50	2.10	1.15	.45	.25	.20
11.....	.35	.90	2.50	1.85	2.10	2.40	3.20	2.05	1.10	.45	.25	.20
12.....	.40	.95	2.50	1.80	2.40	2.30	3.30	2.00	1.05	.45	.20	.20
13.....	.40	1.30	2.50	1.60	2.65	2.15	3.60	1.95	1.05	.45	.20	.20
14.....	.40	1.20	2.45	1.60	5.60	2.05	4.30	1.95	1.00	.45	.20	.20
15.....	.40	1.05	2.20	1.50	5.15	1.85	4.30	1.90	1.00	.45	.20	.20
16.....	.40	1.05	1.90	1.50	4.70	1.85	4.00	1.95	.95	.45	.20	.20
17.....	.35	1.20	1.70	1.45	3.65	1.80	3.65	1.90	.90	.45	.20	.20
18.....	.35	2.00	1.70	1.40	2.80	1.75	3.40	1.80	.85	.40	.20	.20
19.....	.35	1.90	1.70	1.40	2.55	1.75	3.20	1.65	.85	.40	.20	.20
20.....	.40	2.00	1.65	1.40	2.25	1.70	3.20	1.50	.80	.40	.20	.20
21.....	.40	1.80	1.50	1.35	2.25	1.65	3.25	1.40	.75	.40	.20	.20
22.....	.40	1.60	1.40	1.35	2.15	1.65	3.20	1.60	.70	.40	.20	.20
23.....	.40	1.60	1.40	1.35	2.10	1.65	3.40	1.55	.70	.40	.20	.30
24.....	.45	1.50	1.30	1.30	2.00	1.60	3.45	1.40	.70	.35	.20	.30
25.....	.45	1.40	1.25	1.25	1.90	1.60	4.00	1.30	.65	.35	.20	.25
26.....	.40	1.30	1.80	1.25	1.90	1.55	3.80	1.40	.65	.35	.20	.25
27.....	.40	1.30	2.20	1.20	1.90	1.55	3.40	1.65	.60	.35	.20	.25
28.....	.40	1.20	2.80	1.15	2.00	1.55	3.10	1.80	.60	.35	.20	.30
29.....	.40	1.40	3.50	1.15	.....	1.55	3.00	2.00	.60	.30	.20	.30
30.....	.40	2.00	3.70	1.10	.....	1.50	2.90	1.90	.55	.30	.20	.30
31.....	.40	.....	3.40	1.10	.....	1.60	.....	1.90	.....	.30	.....	.....

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1898-99.												
1	0.30	0.45	1.40	1.55	2.50	2.40	2.65	2.50	3.85	1.90	1.05	1.00
2	.30	.45	1.30	1.45	2.20	2.50	2.70	2.50	3.80	1.80	1.05	1.00
3	.30	.45	1.20	1.40	2.00	2.50	2.75	2.50	3.70	1.75	1.05	1.00
4	.30	.55	1.00	1.30	1.95	2.40	3.30	2.55	3.50	1.65	1.05	1.10
5	.30	.50	.90	1.30	1.80	2.25	3.30	3.05	3.10	1.65	1.00	1.20
6	.30	.50	.85	1.25	1.75	2.20	3.30	3.80	3.00	1.60	1.00	1.10
7	.30	.45	.80	1.25	2.00	2.40	3.50	4.40	3.00	1.60	.95	1.10
8	.30	.45	.70	1.15	2.70	2.75	3.70	4.40	3.20	1.60	.95	1.10
9	.30	.50	.65	1.10	3.30	2.60	4.30	4.90	3.30	1.55	.95	1.05
10	.30	.50	.60	1.00	3.30	2.30	4.30	4.60	3.50	1.50	1.05	1.05
11	.35	.50	.60	.95	2.90	2.30	4.10	4.40	3.20	1.50	1.05	1.00
12	.35	.50	.55	.90	2.60	2.10	5.00	4.20	3.10	1.45	1.00	1.00
13	.35	.50	.50	.90	2.50	2.10	4.20	4.05	2.95	1.45	1.00	1.05
14	.35	.55	.50	.90	2.80	2.10	3.60	3.50	3.10	1.45	1.00	1.00
15	.35	.55	.45	.90	3.45	2.15	3.60	3.20	3.00	1.40	1.00	1.00
16	.35	.55	.50	1.80	3.30	2.15	3.80	3.10	2.90	1.35	1.00	1.00
17	.35	.60	.55	2.50	3.40	2.20	3.40	3.05	2.90	1.35	1.00	1.00
18	.35	.65	.60	2.90	3.60	2.30	3.20	3.05	2.75	1.35	1.00	1.00
19	.35	.80	.70	2.70	3.90	2.60	3.05	3.00	2.70	1.30	1.00	1.00
20	.35	.80	.80	3.30	3.70	2.50	3.40	2.95	2.60	1.30	1.05	1.00
21	.35	.80	.80	4.50	3.20	2.50	3.40	3.00	2.50	1.30	1.05	1.00
22	.35	.80	.80	4.00	2.80	2.40	3.45	3.80	2.45	1.25	1.35	1.00
23	.35	.85	.80	3.40	2.60	2.20	3.50	4.10	2.40	1.20	1.20	1.00
24	.35	.85	.75	3.00	2.45	2.60	3.50	4.40	2.25	1.20	1.10	1.00
25	.35	.80	.85	2.80	2.40	2.70	3.60	4.30	2.20	1.20	1.10	1.00
26	.40	.75	.90	3.50	2.20	2.60	3.30	4.00	2.10	1.15	1.05	1.00
27	.40	.75	1.60	3.30	2.10	2.50	3.20	3.80	2.00	1.15	1.05	1.00
28	.40	.75	3.00	3.10	2.40	2.50	3.00	3.80	1.95	1.10	1.05	1.00
29	.40	.80	2.40	3.00	-----	2.55	2.75	4.00	1.90	1.10	1.05	1.00
30	.45	.90	1.90	2.70	-----	2.50	2.60	4.00	1.90	1.10	1.00	1.00
31	.45	-----	1.75	2.60	-----	2.60	-----	3.90	-----	1.10	1.00	-----
1899-1900.												
1	1.00	1.60	3.20	-----	-----	-----	-----	2.70	1.00	.50	.30	.50
2	1.00	1.50	2.90	-----	-----	-----	-----	2.90	.90	.45	.30	.50
3	1.00	1.45	2.75	-----	-----	-----	-----	2.80	.85	.45	.30	.50
4	1.00	1.45	2.60	-----	-----	-----	-----	2.90	.80	.45	.30	.45
5	1.00	1.45	2.40	-----	-----	-----	-----	3.00	.80	.45	.30	.45
6	1.00	1.40	2.30	-----	-----	-----	-----	2.85	.75	.45	.30	.45
7	1.00	1.40	2.20	-----	-----	-----	-----	2.70	.75	.45	.30	.45
8	1.00	1.40	2.20	-----	-----	-----	-----	2.40	.70	.5	.40	.45
9	1.00	1.40	2.20	-----	-----	-----	-----	2.30	.70	.40	.50	.45
10	1.00	1.40	2.20	-----	-----	-----	-----	2.25	.65	.40	.40	.40
11	1.00	1.40	2.20	-----	-----	-----	-----	2.30	.65	.40	.40	.40
12	1.00	1.40	2.25	-----	-----	-----	-----	2.20	.65	.40	.35	.40
13	1.00	1.40	2.20	-----	-----	-----	-----	2.10	.65	.40	.35	.40
14	1.00	1.45	2.20	-----	-----	-----	-----	2.00	.65	.35	.35	.40
15	1.00	1.50	2.20	-----	-----	-----	3.90	1.95	.70	.35	.30	.45
16	1.20	1.50	2.20	-----	-----	-----	3.90	2.35	.70	.35	.30	.45
17	1.40	1.50	2.15	-----	-----	-----	3.80	2.20	.65	.35	.30	.45
18	1.40	1.90	2.15	-----	-----	-----	3.60	2.10	.65	.35	.30	.50
19	1.60	2.10	2.10	-----	-----	-----	3.45	1.95	.65	.35	.30	.50
20	1.50	2.10	2.10	-----	-----	-----	3.35	1.85	.65	.35	.30	.50
21	1.50	2.00	2.10	-----	-----	-----	3.20	1.75	.65	.35	.50	.50
22	1.50	1.80	2.05	-----	-----	-----	3.05	1.65	.60	.35	.40	.55
23	1.50	1.80	2.00	-----	-----	-----	2.90	1.60	.60	.35	.40	.55
24	1.60	1.70	2.00	-----	-----	-----	2.80	1.55	.55	.30	.90	1.00
25	1.65	1.70	2.10	-----	-----	-----	2.65	1.45	.55	.30	1.50	1.00
26	1.70	1.70	2.20	-----	-----	-----	2.55	1.45	.55	.30	1.00	.95
27	1.70	2.40	2.20	-----	-----	-----	2.45	1.35	.50	.30	.80	.85
28	1.75	2.70	2.15	-----	-----	-----	2.35	1.25	.50	.30	.50	.85
29	1.70	3.10	2.15	-----	-----	-----	2.25	1.15	.50	.30	.50	.75
30	1.65	3.15	2.15	-----	-----	-----	2.45	1.10	.50	.30	.50	.70
31	1.60	-----	2.10	-----	-----	-----	-----	1.05	-----	.30	.50	-----

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900-1901.												
1.....	0.65	2.00	2.40	1.75	1.60	5.45	3.05	3.50	1.70	1.00	0.60	0.35
2.....	.70	2.00	2.50	1.70	1.60	5.40	3.00	3.50	1.60	1.00	.55	.35
3.....	.70	2.05	2.70	1.70	1.55	4.90	3.00	3.50	1.50	1.00	.55	.35
4.....	.75	2.10	3.00	1.70	1.45	4.35	2.95	3.55	1.40	1.00	.55	.40
5.....	1.20	2.00	3.50	1.65	1.40	3.90	2.95	3.55	1.40	1.00	.50	.40
6.....	1.10	1.90	3.10	1.60	1.35	3.70	2.90	3.55	1.35	.95	.50	.45
7.....	1.00	1.85	2.85	1.50	1.30	3.85	2.85	3.55	1.40	.95	.50	.45
8.....	1.00	1.80	2.70	1.45	1.25	3.85	2.80	3.60	1.40	.95	.50	.50
9.....	1.00	1.70	2.50	1.40	1.20	3.75	2.75	3.75	1.40	.95	.50	.50
10.....	.90	1.65	2.35	1.35	1.15	3.65	2.80	3.75	1.40	.95	.45	.50
11.....	.85	1.55	2.25	1.30	1.15	3.55	3.10	3.80	1.35	.90	.45	.55
12.....	.85	1.50	2.05	1.25	1.10	3.40	3.60	3.70	1.30	.90	.45	.55
13.....	.80	1.40	1.95	1.20	1.10	3.40	3.95	3.60	1.30	.90	.45	.55
14.....	.80	1.35	1.90	1.10	1.10	3.35	3.85	3.45	1.25	.80	.45	.60
15.....	.80	1.25	1.90	1.10	1.10	3.30	3.60	3.20	1.30	.80	.45	.60
16.....	.75	1.25	1.95	1.10	1.10	3.30	3.35	3.05	1.35	.80	.40	.60
17.....	.75	1.20	1.95	1.10	1.10	3.25	3.45	2.90	1.35	.80	.40	.60
18.....	.75	1.20	1.95	1.10	1.10	3.25	3.35	2.85	1.45	.75	.40	.65
19.....	.80	1.20	2.00	1.10	1.10	3.40	3.05	2.75	1.45	.75	.40	.65
20.....	.85	1.25	2.10	1.10	1.10	3.15	3.00	2.70	1.40	.75	.40	.65
21.....	.90	1.25	2.95	1.20	1.10	2.95	3.55	2.60	1.30	.75	.40	.65
22.....	.90	1.30	2.85	1.20	1.10	3.15	3.65	2.50	1.30	.75	.40	.70
23.....	1.00	1.30	2.80	1.20	1.10	3.00	3.65	2.45	1.30	.75	.35	.70
24.....	1.05	1.35	2.70	1.20	1.10	3.00	3.65	2.35	1.25	.70	.35	.70
25.....	1.15	1.80	2.60	1.20	1.10	4.00	2.85	3.50	2.20	1.25	.70	.75
26.....	1.20	1.80	2.40	1.10	1.10	2.80	3.35	2.10	1.20	.70	.35	.75
27.....	1.20	1.75	2.30	1.10	1.10	5.95	2.80	3.30	2.10	1.20	.70	.35
28.....	1.30	1.65	2.15	1.10	1.10	5.75	2.85	3.10	2.00	1.10	.65	.75
29.....	1.40	1.65	1.95	1.10	1.10	2.85	3.10	1.90	1.10	.65	.35	.75
30.....	1.60	2.10	1.80	1.10	1.10	2.95	3.25	1.90	1.05	.60	.35	.75
31.....	2.00	.....	1.80	1.10	1.10	2.95	.....	1.80	.....	.60	.35	.....
1901-2.												
1.....	.75	.85	.90	1.35	1.00	2.50	1.85	2.65	2.60	.95	.80	.75
2.....	.75	.80	.90	1.30	1.00	2.45	2.00	3.10	2.40	1.10	.80	.75
3.....	.75	.80	.90	1.30	1.00	2.25	2.10	3.35	2.25	1.55	.80	.75
4.....	.75	.80	.95	1.35	1.00	2.15	2.25	3.50	2.05	2.20	.80	.75
5.....	.75	.80	1.00	1.40	1.00	2.00	2.30	3.45	1.90	1.95	.80	.75
6.....	.75	.80	1.20	1.40	1.05	1.85	2.80	3.20	1.80	1.60	.80	.75
7.....	.75	.80	1.30	1.45	1.05	1.75	3.90	3.30	1.70	1.40	.80	.75
8.....	.75	.80	1.50	1.45	1.10	1.70	3.95	3.40	1.65	1.25	.75	.75
9.....	.80	.85	1.60	1.40	1.80	1.70	3.70	3.40	1.55	1.15	.75	.75
10.....	.80	.85	1.55	1.40	2.50	1.75	3.40	3.45	1.50	1.10	.75	.75
11.....	.75	.85	1.55	1.40	2.80	1.80	3.20	3.40	1.45	1.10	.75	.75
12.....	.75	.80	1.55	1.40	2.80	1.90	2.95	3.30	1.40	1.05	.75	.75
13.....	.75	.80	1.50	1.35	2.85	1.80	2.75	3.25	1.30	1.05	.75	.75
14.....	.75	.80	1.50	1.35	2.90	1.70	2.60	3.20	1.25	1.05	.75	.75
15.....	.75	.80	1.50	1.35	2.90	1.65	2.45	3.10	1.20	1.05	.75	.75
16.....	.75	.80	1.50	1.30	2.90	1.60	2.50	3.05	1.20	1.00	.80	.75
17.....	.75	.80	1.45	1.30	3.50	1.70	2.60	3.00	1.15	.95	.80	.75
18.....	.75	.80	1.45	1.30	3.60	1.90	3.20	2.90	1.15	.95	.80	.75
19.....	.75	.80	1.50	1.30	3.00	2.00	3.85	3.30	1.10	.90	.75	.85
20.....	.75	.85	1.50	1.25	2.65	2.05	3.50	5.80	1.10	.90	.75	.85
21.....	.75	.85	1.95	1.25	2.40	2.00	3.30	5.75	1.10	.90	.75	.85
22.....	.80	.85	1.85	1.25	2.20	1.90	3.00	5.25	1.05	.90	.75	.85
23.....	.80	.85	1.70	1.20	2.10	1.90	2.80	4.80	1.05	.90	.75	.85
24.....	.80	.85	1.70	1.20	2.25	1.90	2.65	4.40	1.05	.85	.75	.90
25.....	.80	.85	1.65	1.10	2.80	1.80	2.50	4.10	1.00	.85	.75	.90
26.....	.80	.85	1.65	1.10	2.75	1.75	2.40	3.90	1.00	.85	.75	.90
27.....	.80	.85	1.65	1.05	2.60	1.70	2.40	3.60	.95	.85	.75	.95
28.....	.80	.85	1.60	1.05	2.50	1.70	2.45	3.40	.95	.80	.75	.90
29.....	.85	.90	1.50	1.05	.....	1.65	2.50	3.25	.95	.80	.75	.85
30.....	.85	.90	1.45	1.05	.....	1.70	2.60	3.00	.95	.80	.75	.85
31.....	.85	.....	1.35	1.00	.....	1.75	.....	2.75	.80	.75	.....	.....

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902-3.												
1	0.85	0.65	2.40	1.90	1.30	0.70	2.50	1.65	0.90	0.45	0.40	0.60
2	.85	.70	1.95	2.40	1.10	.70	2.10	1.60	.90	.45	.40	.55
3	.85	.70	1.80	3.60	.95	.70	1.90	1.60	.80	.45	.40	.60
4	.85	.70	1.70	4.10	.90	.65	1.75	1.60	.80	.45	.40	.65
5	.85	.75	1.65	3.50	.80	.60	1.60	1.50	.75	.50	.40	.70
6	.85	.80	1.55	3.05	.70	.55	1.50	1.50	.75	.50	.40	.80
7	.85	1.10	1.50	2.80	.70	.50	1.45	1.50	.70	.50	.40	.80
8	.90	1.20	1.50	2.60	.70	.45	1.45	1.40	.65	.50	.40	.75
9	.90	1.20	3.10	2.45	.70	.45	1.55	1.40	.65	.47	.40	.70
10	.90	1.15	3.20	2.35	.70	.45	1.45	1.50	.60	.45	.40	.65
11	.90	1.10	2.95	2.25	.60	.45	1.40	1.40	.60	.40	.40	.60
12	.85	1.05	2.60	2.15	.50	.45	1.35	1.40	.70	.40	.40	.65
13	.85	1.00	2.35	2.00	.50	.60	1.30	1.40	.65	.40	.40	.60
14	.85	1.20	2.10	1.90	.50	.60	1.25	1.30	.65	.40	.40	.60
15	.85	1.20	2.00	1.80	.50	.60	1.25	1.20	.70	.40	.40	.60
16	.85	1.45	1.85	1.75	.45	.65	1.45	1.10	.65	.40	.40	.60
17	.85	1.70	1.75	1.70	.45	.65	1.70	1.01	.65	.40	.40	.60
18	.85	1.75	1.65	1.60	.45	.60	1.60	1.02	.60	.40	.40	.60
19	.85	1.85	1.60	1.60	.45	.60	1.80	1.00	.60	.40	.40	.60
20	.85	1.70	1.55	1.60	.45	.60	1.70	.95	.55	.40	.40	.60
21	.85	1.65	1.50	1.80	.45	.75	1.80	.95	.50	.40	.40	.60
22	.95	1.55	1.40	2.10	.45	.85	2.10	.95	.50	.40	.40	.60
23	1.00	1.45	1.40	2.40	.45	1.05	2.00	1.00	.50	.40	.40	.60
24	1.05	1.55	1.40	4.40	.55	1.45	2.00	1.00	.50	.40	.40	.60
25	1.05	1.60	1.80	4.20	.60	1.85	2.04	.95	.50	.40	.70	.60
26	1.00	1.60	3.00	3.00	.60	1.95	2.06	.90	.47	.40	.70	.60
27	1.00	1.60	3.10	2.40	.65	2.20	2.03	.90	.47	.40	.60	.60
28	1.00	1.55	2.65	2.00	.70	3.15	1.80	.90	.47	.40	.60	.60
29	.65	1.55	2.40	1.70	.....	3.75	1.80	.95	.47	.40	.60	.....
30	.65	1.60	2.20	1.55	.....	3.10	1.70	.95	.47	.40	.60	.60
31	.65	.....	2.00	1.40	.....	2.90	.....	.95	.....	.40	.60	.....
1903-4.												
1	.60	.50	1.80	1.00	1.30	1.70	2.00	.80	.....	.....	.....	.....
2	.60	.50	1.80	1.00	1.30	1.60	2.25	.70	.....	.....	.....	.....
3	.60	.50	1.70	1.00	1.30	1.60	2.70	.90	.....	.....	.....	.....
4	.70	.55	1.60	1.00	1.25	1.50	2.50	.90	.....	.....	.....	.....
5	.90	.55	1.40	1.00	1.25	.....	2.30	.80	.....	.....	.....	.....
6	.80	.60	1.40	1.00	1.25	2.20	3.20	.70	.....	.....	.....	.....
7	.80	.70	1.30	1.00	1.20	3.35	2.60	.70	.....	.....	.....	.....
8	.80	.70	1.20	1.00	1.20	4.75	2.60	.70	.....	.....	.....	.....
9	.80	.70	1.00	1.10	1.20	3.60	3.00	.70	.....	.....	.....	.....
10	.70	1.00	1.00	1.20	1.20	2.85	4.00	.70	.....	.....	.....	.....
11	.70	1.00	1.00	1.20	1.20	2.40	4.40	.70	.....	.....	.....	.....
12	.70	1.20	1.00	1.40	1.20	2.00	4.60	.70	.....	.....	.....	.....
13	.70	1.30	1.00	1.80	1.20	1.70	5.20	.70	.....	.....	.....	.....
14	.70	1.60	1.00	1.90	1.20	1.80	5.35	.60	.....	.....	.....	.....
15	.70	1.50	1.50	2.10	1.30	1.80	4.80	.60	.....	.....	.....	.....
16	.70	1.30	1.90	2.00	1.90	1.70	4.00	.60	.....	.....	.....	.....
17	.70	1.20	1.60	1.90	1.80	1.60	3.50	.50	.....	.....	.....	.....
18	.70	1.10	1.60	1.80	1.70	1.80	3.20	.50	.....	.....	.....	.....
19	.70	1.00	1.40	1.50	1.60	1.80	3.50	.60	.....	.....	.....	.....
20	.70	1.10	1.40	1.40	1.90	1.90	2.70	.70	.....	.....	.....	.....
21	.65	2.50	1.30	1.40	1.70	1.75	.....	.60	.....	.....	.....	.....
22	.65	2.70	1.30	1.90	1.60	1.50	1.70	.50	.....	.....	.....	.....
23	.60	2.40	1.20	2.00	2.10	1.40	1.10	.40	.....	.....	.....	.....
24	.60	2.20	1.20	1.90	2.10	1.10	.90	.30	.....	.....	.....	.....
25	.55	2.10	1.20	1.80	2.00	1.00	1.00	.10	.....	.....	.....	.....
26	.55	2.00	1.20	1.60	2.00	1.00	.....	.00	.....	.....	.....	.....
27	.55	2.00	1.20	1.50	1.90	1.00	1.50	.....	.....	.....	.....	.....
28	.50	1.90	1.20	1.40	1.80	1.10	1.50	.....	.....	.....	.....	.....
29	.50	1.80	1.20	1.50	1.80	2.10	1.20	.....	.....	.....	.....	.....
30	.50	1.80	1.10	1.30	.....	2.60	1.00	.....	.....	.....	.....	.....
31	.50	.....	1.10	1.30	.....	2.20	.....	.....	.....	.....	.....	.....

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....		1.2	1.3	1.5	1.6	2.0	2.3	1.8	1.55	1.3	1.1	1.1
2.....		1.2	1.2	1.5	1.5	2.0	2.4	1.9	1.7	1.3	1.1	1.1
3.....		1.2	1.2	1.5	1.5	2.0		2.0	1.65	1.3	1.1	1.1
4.....		1.2	1.2	1.4	1.5	1.9	2.5	2.0		1.3	1.1	1.1
5.....		1.2	1.2	1.4	1.5	1.9	2.8	2.0	1.6	1.3	1.1	1.1
6.....		1.2	1.2	1.4	1.5	1.9	2.8	2.1	1.6	1.3	1.1	1.1
7.....		1.1	1.2	1.4	1.5	1.8	2.65		1.6	1.25	1.1	1.1
8.....		1.1	1.2	1.4	1.5	1.8	2.5		1.55	1.25	1.1	1.1
9.....		1.1	1.2	1.4	1.5	1.75	2.5	2.1	1.5	1.25	1.1	1.1
10.....		1.1	1.2	1.4	1.5	1.75	2.3	2.1	1.5	1.25	1.1	1.1
11.....		1.1	1.2	1.4	1.5	1.7	2.1	2.25	1.45	1.2	1.1	1.1
12.....		1.1	1.2	1.4	1.5	1.7	2.2	2.2	1.4	1.2	1.1	1.1
13.....		1.1	1.2	1.3	1.5	1.8	2.1	2.1	1.4	1.15	1.1	1.1
14.....		1.1	1.3	1.3	1.5	1.8	2.0	2.0	1.35	1.15	1.1	1.1
15.....	1.17	1.2	1.3	1.3	1.5	1.8	2.0	1.95	1.35	1.1	1.1	1.1
16.....		1.2	1.3	1.3	1.5	1.8	2.0	1.9	1.35	1.1	1.1	1.1
17.....	1.22	1.2	1.3	1.3	1.4	1.8	1.95	1.85	1.3	1.1	1.1	1.1
18.....		1.2	1.3	1.3	1.4	1.8	1.9	1.8	1.3	1.1	1.1	1.1
19.....	1.2	1.2		1.3	1.4	1.8	2.0	1.8	1.3	1.1	1.1	1.1
20.....	1.2	1.2	1.3	1.3	1.4	1.8	2.1	1.8	1.25	1.1	1.1	1.1
21.....	1.15	1.2	1.3	1.3	1.4	2.0	2.2	1.7	1.25	1.1	1.1	1.1
22.....	1.1	1.2	1.3	1.3	1.4		2.3	1.5	1.25	1.1	1.1	1.1
23.....	1.1	1.2	1.3	1.6	1.5	2.0	2.3	1.7	1.25	1.1	1.1	1.1
24.....	1.2	1.2	1.3	2.0	1.6	2.4	2.2	1.85	1.3	1.1	1.1	1.1
25.....	1.2	1.2		2.2	2.0	2.2	2.1	1.9		1.1	1.1	1.1
26.....	1.2	1.2	1.3	2.0	2.0		2.0	1.8	1.35	1.1		1.1
27.....	1.2	1.2	1.3		2.0	2.6	1.9	1.8	1.4	1.1	1.1	1.1
28.....	1.2	1.3	1.3	1.9	2.0	2.45	1.8	1.75	1.35	1.1	1.1	1.1
29.....	1.2	1.3	1.4	1.8		2.35	1.7	1.7	1.35	1.1	1.1	1.3
30.....	1.2	1.3	1.5	1.8		2.3	1.7	1.65	1.35	1.1	1.1	1.3
31.....	1.2		1.7	1.8		2.2		1.6		1.1	1.1	
1905-6.												
1.....	1.25	1.2	1.35	1.45		1.9	3.7	2.2				
2.....	1.2	1.2	1.4	1.4	1.8	1.9	3.25					
3.....	1.15	1.2	1.52	1.4	1.8	1.8	2.9	2.0				
4.....	1.15	1.2	1.65	1.5	1.8	1.8	2.9	2.0				
5.....	1.2	1.2	1.62	1.5	1.8	1.8	2.8	2.0				
6.....	1.2	1.2	1.6		1.7	1.8	2.9	1.95				
7.....	1.2	1.2	1.6	1.8	1.6	1.8	3.3	1.9				
8.....	1.2	1.2	1.6	1.7	1.6	2.05		1.8				
9.....	1.2	1.2	1.6	1.65	1.6	2.3		1.8				
10.....	1.2	1.2	1.6	1.65	1.55	2.4	2.9	1.75				
11.....	1.2	1.2	1.4	1.6	1.5		2.8	1.75				
12.....	1.2	1.2	1.4	1.7	1.5	2.0	2.5	1.7				
13.....	1.2	1.2	1.4	1.65	1.5	1.9	2.5	1.7				
14.....	1.2	1.2	1.4	1.6	1.5		2.4	1.7				
15.....	1.2	1.2	1.4	1.6	1.5		2.5	1.6				
16.....	1.2	1.2	1.4	1.6	1.5	1.7	2.4	1.5				
17.....	1.2	1.2	1.5	1.6		1.7	2.4	1.5				
18.....	1.2	1.2	1.55	1.6	1.7	1.7	2.4	1.45				
19.....	1.2	1.2	1.55	1.55	2.4		2.4	1.4				
20.....	1.2	1.2	1.55	1.55	2.3	1.5	2.7	1.4				
21.....	1.2	1.2	1.6	1.5	2.4	1.5	2.8	1.4				
22.....	1.2	1.2	1.6	1.5	2.3	1.5	2.9	1.4				
23.....	1.2	1.2	1.55		2.2	1.5		1.4				
24.....	1.2	1.2	1.5	2.0	2.0	2.0	2.5	1.4				
25.....	1.2	1.2		2.25	2.0	2.7	2.5	1.4				
26.....	1.2	1.3	1.45	2.1		2.75	2.5	1.4				
27.....	1.2	1.3	1.4	2.0		3.4	2.4	1.4				
28.....	1.2	1.3	1.4	1.95		3.3	2.4	1.7				
29.....	1.2	1.3	1.4	1.9		3.0	2.4					
30.....	1.2	1.35	1.4	1.9		3.5	2.3					
31.....	1.2		1.4	1.85		4.1						

NOTE.—Gage heights beginning Oct. 15, 1904, refer to a new gage. Gage destroyed by a flood, May 30, 1906. Gage height on that date estimated from high-water marks as 9.1 feet, referred to gage established Dec. 3, 1906.

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.				2.8	2.8	3.0						
2.				2.5	2.6	2.8						
3.			1.5	2.6	2.6	2.7						
4.			1.5	2.9	3.5	2.5						
5.			1.5	2.6	4.7	2.5						
6.			1.6	2.3	4.6	2.5						
7.			2.1	2.1	3.8	2.4						
8.			2.5	2.0	3.7	2.4						
9.			2.4	1.9	3.7	2.4						
10.			2.2	1.8	3.8	2.4						
11.			2.2	1.8	3.6	2.5						
12.			2.2	1.7	3.4	2.4						
13.			2.1	1.6	3.1	2.3						0.7
14.			2.0	1.6	3.0	2.2						.7
15.			2.0	1.5	3.0	2.1						.7
16.			1.9	1.4	3.0	2.1						.7
17.			1.9	1.4	2.9	2.1						.7
18.			1.9	1.4	2.8	2.3						.7
19.			1.9	1.3	3.0	2.7						.7
20.			5.2	1.3	3.5	3.8						.7
21.			5.8	1.3	3.6	3.5						.7
22.			4.5	1.4	3.6	3.5						.7
23.			3.8	1.4	3.7	3.2						.7
24.			3.6	1.4	3.7	2.9						.7
25.			3.7	1.4	3.9	2.8						.7
26.			4.1	1.4	3.7	2.6						.7
27.			2.7	1.4	3.5	2.5						.7
28.			3.6	1.4	3.2	2.4						.7
29.			3.4	1.5		2.3						.7
30.			3.1	2.0		2.2						.7
31.			3.0	2.6		2.2						
1907-8.												
1.	0.75	0.8	1.05	1.7	1.3	2.1	1.65	1.8	0.9	0.45	0.05	
2.	.75	.8	1.05	1.65	1.3	2.0	1.7	1.8	.85	.45	.05	
3.	.75	.8	1.0	1.6	1.3	2.0	1.85	1.7	.85	.4	.05	
4.	.7	.8	1.0	1.55	1.35	1.9	2.0	1.65	.8	.4	.0	
5.	.7	.8	1.0	1.55	1.35	1.85	1.9	1.6	.8	.35	.0	
6.	.7	.8	1.0	1.55	1.35	1.85	1.8	1.6	.8	.35	.0	
7.	.7	.8	1.0	1.5	1.4	1.75	1.65	1.55	.75	.35	.0	
8.	.7	.8	1.05	1.5	1.4	1.6	1.6	1.5	.75	.3	.0	
9.	.7	.8	1.05	1.5	1.4	1.5	1.65	1.45	.75	.3	.0	.0
10.	.7	.8	1.05	1.5	1.4	1.55	1.8	1.4	.7	.3	.0	.0
11.	.7	.8	1.05	1.5	1.45	1.7	2.5	1.4	.65	.3	.0	.0
12.	.7	.8	1.1	1.5	1.45	1.8	2.85	1.4	.65	.25	.0	.0
13.	.7	.8	1.2	1.45	1.5	2.3	2.9	1.4	.6	.25	.0	.0
14.	.7	.8	1.5	1.45	1.5	3.85	2.8	1.35	.6	.25	.0	.0
15.	.7	.8	1.45	1.45	1.55	7.6	2.8	1.35	.6	.25	.0	.0
16.	.7	.8	1.35	1.45	1.65	5.8	2.75	1.5	.6	.2		.0
17.	.7	.8	1.3	1.45	1.75	4.5	2.75	1.35	.55	.2		.05
18.	.7	.8	1.25	1.4	1.7	3.0	2.75	1.35	.55	.2		.1
19.	.7	.8	1.25	1.4	1.7	2.8	2.8	1.3	.6	.15		.15
20.	.7	.8	1.25	1.4	1.65	2.3	2.8	1.25	.65	.15		.15
21.	.7	.85	1.25	1.4	1.65	2.0	2.8	1.25	.6	.15		.15
22.	.7	.85	2.2	1.35	1.65	2.0	2.6	1.25	.55	.15		.15
23.	.7	.9	2.35	1.35	1.7	2.0	2.5	1.25	.55	.15		.15
24.	.7	.95	3.7	1.35	1.75	2.05	2.35	1.25	.55	.15		.1
25.	.7	1.65	3.0	1.35	1.8	2.1	2.3	1.25	.5	.1		.1
26.	.7	1.55	3.0	1.35	1.9	2.0	2.1	1.2	.5	.1		.05
27.	.7	1.4	3.0	1.35	2.05	1.9	2.0	1.1	.5	.1		.05
28.	.7	1.25	2.5	1.35	2.15	1.75	1.9	1.1	.5	.1		.05
29.	.7	1.15	2.3	1.35	2.1	1.7	1.85	1.1	.45	.1		.05
30.	.8	1.1	2.05	1.3		1.6	1.8	1.05	.45	.1		.05
31.	.8		1.85	1.3		1.6	1.0			.1		

NOTE.—From Aug. 16 to Sept. 8, 1908, gage heights are recorded as 0.0, but probably -0.05 is more nearly correct.

Daily gage height, in feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	0.1	0.4	0.4	0.4	0.85	1.6	2.05	2.05	1.5	0.25	0.1	-0.1
2.....	.1	.4	.4	.4	.8	1.7	1.95	2.2	1.4	.2	.1	-.1
3.....	.1	.4	.4	.55	.8	1.85	1.95	2.2	1.35	.2	.1	.0
4.....	.1	.35	.4	.8	.8	1.85	1.9	2.3	1.3	.2	.1	.0
5.....	.1	.35	.4	.8	.8	1.8	1.75	2.0	1.2	.2	.05	-.05
6.....	.1	.35	.35	.75	.8	1.75	1.65	1.9	1.15	.2	.05	-.05
7.....	.1	.35	.35	.65	.75	1.7	1.6	1.8	1.1	.15	.05	-.05
8.....	.1	.35	.4	.6	.75	1.6	1.7	1.7	1.0	.15	.05	-.1
9.....	.1	.35	.45	.6	.75	1.6	1.8	1.65	.95	.15	.05	-.1
10.....	.1	.3	.45	.55	.75	1.5	2.0	1.65	.9	.15	.05	-.1
11.....	.1	.3	.5	.5	.7	1.45	2.0	1.6	.85	.15	.0	.05
12.....	.15	.3	.6	.45	.7	1.45	2.0	1.6	.85	.15	.0	.05
13.....	.2	.3	.6	.45	.65	1.6	2.0	1.6	.8	.15	.0	.0
14.....	.4	.3	.6	.4	.65	1.7	2.0	1.55	.75	.15	.0	-.05
15.....	.4	.3	.6	.6	.7	1.76	1.95	1.55	.7	.1	.0	-.05
16.....	.3	.3	.55	1.2	1.05	1.85	2.0	1.5	.65	.1	.0	-.05
17.....	.25	.3	.5	1.7	2.65	2.2	2.1	1.5	.65	.1	.0	-.1
18.....	.2	.3	.5	2.0	2.3	2.0	2.0	1.5	.65	.1	.0	-.1
19.....	.25	.3	.45	2.8	2.0	1.8	1.85	1.5	.6	.1	-.05	-.1
20.....	.25	.4	.45	3.1	1.8	1.65	1.8	1.5	.6	.1	-.05	.0
21.....	.25	.45	.45	2.9	1.6	1.55	1.7	1.5	.6	.1	-.05	.0
22.....	.3	.5	.4	2.4	1.5	1.55	1.65	1.4	.6	.1	-.05	.0
23.....	.3	.5	.4	2.0	1.4	1.5	1.65	1.35	.55	.1	-.05	.0
24.....	.3	.5	.4	1.65	1.35	1.65	1.7	1.35	.5	.1	-.05	.0
25.....	.3	.45	.4	1.5	1.3	1.8	1.7	1.35	.45	.1	-.05	.0
26.....	.3	.45	.4	1.4	1.2	2.0	1.85	1.4	.4	.1	-.05	.0
27.....	.4	.45	.4	1.25	1.2	2.1	2.65	1.95	.35	.15	-.1	.0
28.....	.4	.45	.4	1.1	1.4	2.0	2.65	1.75	.35	.5	-.1	.0
29.....	.4	.45	.4	1.0	.....	1.9	2.35	1.7	.3	.25	-.1	.0
30.....	.45	.4	.4	.9	.....	1.9	2.15	1.6	.25	.15	-.1	.0
31.....	.45	.....	.4	.85	.....	2.0	.....	1.55	.....	.1	-.1	.....
1909-10.												
1.....	.0	.2	2.5	.45	1.25	3.5	2.2	1.6	.7	.25	.1	.1
2.....	.0	.25	2.2	.45	1.15	4.2	2.2	1.5	.65	.25	.1	.1
3.....	.0	.25	1.8	.45	1.1	4.0	2.15	1.45	.65	.25	.1	.1
4.....	.0	.25	1.45	.4	1.0	3.9	2.1	1.55	.6	.25	.1	.1
5.....	.05	.25	1.25	.4	.95	3.8	2.05	1.55	.55	.2	.1	.1
6.....	.05	.25	1.1	.4	.85	3.3	2.2	1.5	.55	.2	.1	.1
7.....	.05	.25	1.05	.4	.8	2.8	2.3	1.5	.55	.2	.1	.1
8.....	.05	.25	1.45	.35	.75	2.65	2.5	1.5	.5	.2	.1	.1
9.....	.05	.25	1.2	.35	.75	2.65	3.1	1.8	.45	.2	.1	.1
10.....	.0	.25	1.15	.35	.7	2.7	3.1	1.8	.45	.15	.1	.1
11.....	.0	.25	1.1	.3	.7	2.8	3.05	1.75	.45	.15	.1	.1
12.....	.0	.25	1.8	.3	.7	2.9	3.05	1.65	.4	.15	.1	.1
13.....	.0	.25	1.7	.3	.7	3.4	2.95	1.5	.4	.15	.1	.1
14.....	.0	.25	1.7	.3	.7	3.45	2.55	1.45	.4	.15	.1	.1
15.....	.0	.25	1.5	.3	.7	3.5	2.35	1.45	.4	.15	.1	.15
16.....	.0	.25	1.3	.3	.7	3.6	2.25	1.35	.4	.15	.1	.15
17.....	.0	.35	1.15	.3	.7	3.7	2.3	1.25	.4	.15	.1	.15
18.....	.05	.6	1.0	.25	.75	3.7	2.4	1.2	.4	.15	.1	.15
19.....	.05	.9	.95	.25	.75	3.8	2.5	1.15	.35	.15	.1	.15
20.....	.05	1.75	.85	.3	.75	5.0	2.7	1.1	.35	.15	.1	.15
21.....	.1	1.5	.8	1.4	.75	4.5	2.5	1.1	.35	.15	.1	.15
22.....	.1	4.2	.75	1.3	.75	4.4	2.25	1.05	.35	.15	.1	.15
23.....	.1	3.8	.7	1.75	.75	3.85	2.2	1.0	.35	.15	.1	.15
24.....	.1	3.1	.65	2.6	1.1	3.6	2.2	.9	.3	.15	.1	.15
25.....	.1	2.45	.6	2.2	1.1	3.0	2.15	.85	.3	.15	.1	.15
26.....	.1	1.8	.6	1.75	1.2	2.7	2.1	.8	.3	.1	.1	.15
27.....	.1	1.6	.55	1.5	1.3	2.6	1.95	.8	.3	.1	.1	.15
28.....	.1	1.45	.55	1.4	1.45	2.5	1.85	.75	.3	.1	.1	.15
29.....	.1	1.35	.5	1.35	.....	2.4	1.75	.75	.25	.1	.1	.15
30.....	.1	2.53	.5	1.3	.....	2.35	1.7	.75	.25	.1	.1	.15
31.....	.1	.....	.5	1.3	.....	2.25	.....	.7	.....	.1	.1	.....

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1896.				1896.				1896.			
1.....		80	80	11.....		87	95	21.....			80
2.....		75	80	12.....		87	95	22.....	87		80
3.....		75	80	13.....		87	87	23.....	95		80
4.....		95	80	14.....		87	87	24.....	87		80
5.....		87	80	15.....		87	87	25.....	87		80
6.....		87	80	16.....		80	87	26.....		87	80
7.....		87	80	17.....		80	80	27.....	87		80
8.....		87	80	18.....		80	80	28.....	87		80
9.....		87	80	19.....		80	80	29.....	87		80
10.....		87	80	20.....		80	80	30.....		80	80
								31.....	80		95

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896-97.												
1.....	80	125	400	544	544	544	1,290	1,550	298	190	100	91
2.....	80	125	400	521	642	642	1,290	1,550	281	248	100	100
3.....	80	125	400	498	984	592	1,250	1,630	264	334	100	83
4.....	80	165	650	498	1,110	592	1,250	1,840	264	298	100	83
5.....	80	165	890	476	1,180	592	1,400	2,150	233	281	100	83
6.....	80	125	860	476	1,180	544	1,550	2,340	233	264	100	109
7.....	80	125	800	454	1,110	544	1,630	1,670	233	233	100	100
8.....	80	800	740	454	922	498	1,800	1,400	233	218	100	100
9.....	80	560	740	454	862	498	2,150	1,250	204	204	100	91
10.....	95	740	800	454	1,180	454	3,050	1,250	190	190	100	91
11.....	95	560	830	433	1,110	433	2,940	1,320	190	177	100	91
12.....	87	450	1,970	433	1,180	433	2,840	1,320	177	177	100	91
13.....	87	450	1,880	433	1,320	412	2,630	1,400	177	164	100	83
14.....	87	1,400	1,400	433	1,320	412	3,050	1,320	177	152	100	83
15.....	87	2,150	1,110	433	1,220	412	3,440	1,290	264	152	91	83
16.....	80	2,060	952	412	1,110	454	3,500	1,250	316	141	91	83
17.....	80	2,060	860	412	922	498	4,090	1,360	281	141	91	83
18.....	87	1,880	800	412	862	498	4,090	1,180	264	129	91	83
19.....	87	1,590	770	498	748	498	3,380	984	233	129	83	75
20.....	87	1,250	740	476	748	476	2,440	862	218	129	83	75
21.....	87	1,050	680	476	592	476	1,880	748	218	119	83	75
22.....	87	890	680	476	544	476	1,800	642	204	119	83	75
23.....	80	800	650	476	476	454	1,800	544	190	109	83	75
24.....	80	680	620	454	454	1,710	1,710	568	190	109	83	75
25.....	80	650	560	454	412	4,220	1,710	412	190	109	83	75
26.....	80	590	560	454	454	2,940	2,440	353	233	109	83	75
27.....	87	500	560	454	454	2,150	2,440	316	218	100	75	83
28.....	87	475	530	476	476	1,880	1,970	298	204	100	75	83
29.....	87	425	500	476	.....	1,710	1,710	298	190	100	75	83
30.....	95	400	500	498	.....	1,510	1,630	298	190	100	75	83
31.....	145	.....	500	521	.....	1,360	.....	298	.....	100	109	.....
1897-98.												
1.....	83	91	642	1,050	264	776	544	1,150	568	115	83	74
2.....	83	91	592	922	334	833	804	1,080	498	115	79	74
3.....	83	91	544	748	334	833	922	1,020	454	115	79	74
4.....	83	91	498	642	498	922	984	892	412	115	79	74
5.....	83	91	544	592	694	953	1,320	892	392	106	79	74
6.....	83	91	642	694	862	953	1,360	804	372	106	79	74
7.....	83	91	1,150	642	804	1,250	1,470	776	334	106	79	74
8.....	83	100	1,180	642	721	1,320	1,470	721	334	106	79	74
9.....	83	109	984	642	694	1,250	1,400	694	298	99	79	74
10.....	83	177	984	592	694	984	1,630	694	281	99	79	74
11.....	83	204	922	568	694	862	1,400	668	264	99	79	74
12.....	91	219	922	544	862	804	1,470	642	248	99	74	74
13.....	91	334	922	454	1,020	721	1,710	617	248	99	74	74
14.....	91	298	892	454	3,730	668	2,340	617	233	99	74	74
15.....	91	248	748	412	3,220	568	2,340	592	233	99	74	74
16.....	91	248	592	412	2,740	568	2,060	617	217	99	74	74
17.....	83	298	498	392	1,760	544	1,760	592	202	99	74	74
18.....	83	642	498	372	1,110	521	1,550	544	187	92	74	74
19.....	83	592	498	372	953	521	1,400	476	187	92	74	74
20.....	91	642	476	372	776	498	1,400	412	172	92	74	74
21.....	91	544	412	353	776	476	1,440	372	159	92	74	74
22.....	91	454	372	353	721	476	1,400	454	146	92	74	74
23.....	91	454	372	353	694	476	1,550	433	146	92	74	83
24.....	100	412	334	334	642	454	1,590	372	146	88	74	83
25.....	100	372	316	316	592	454	2,060	334	135	88	74	79
26.....	91	334	544	316	592	433	1,880	372	135	88	74	79
27.....	91	334	748	298	592	433	1,550	476	124	88	74	79
28.....	91	298	1,110	281	642	433	1,320	544	124	88	74	83
29.....	91	372	1,630	281	.....	433	1,250	642	124	83	74	83
30.....	91	642	1,800	264	.....	412	1,180	592	115	83	74	83
31.....	91	.....	1,550	264	.....	454	.....	592	.....	83	74	.....

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1898-99.												
1.....	83	99	372	433	922	862	1,020	600	1,470	330	96	88
2.....	83	99	334	397	748	922	1,050	600	1,430	290	96	88
3.....	83	99	298	372	642	922	1,080	600	1,360	275	96	88
4.....	83	115	233	334	617	862	1,480	625	1,220	245	96	105
5.....	83	106	202	334	544	776	1,480	920	950	245	88	125
6.....	83	106	187	316	521	748	1,480	1,430	890	230	88	105
7.....	83	99	172	316	642	862	1,630	1,910	890	230	80	105
8.....	83	99	146	281	1,050	1,080	1,800	1,910	1,010	230	80	105
9.....	83	106	135	264	1,470	984	2,340	2,360	1,080	215	80	96
10.....	83	106	124	233	1,470	804	2,340	2,090	1,220	200	96	96
11.....	87	106	124	217	1,180	804	2,150	1,910	1,010	200	96	88
12.....	87	106	115	202	980	694	2,450	1,750	950	185	88	88
13.....	87	106	106	202	922	694	1,750	1,630	860	185	88	96
14.....	87	115	106	202	1,110	694	1,290	1,220	950	185	88	88
15.....	87	115	99	202	1,590	721	1,290	1,010	890	170	88	88
16.....	87	115	106	544	1,470	721	1,430	950	830	158	88	88
17.....	87	124	115	922	1,550	748	1,150	920	830	158	88	88
18.....	87	135	124	1,180	1,710	804	1,010	920	740	158	88	88
19.....	87	172	146	1,050	1,970	984	920	890	710	145	88	88
20.....	87	172	172	1,470	1,800	922	1,150	860	650	145	96	88
21.....	87	172	172	2,530	1,400	922	1,150	890	600	145	96	88
22.....	87	172	172	2,060	1,110	862	1,180	1,430	575	135	158	88
23.....	87	187	172	1,550	984	748	1,220	1,670	550	125	125	88
24.....	87	187	159	1,250	892	984	1,220	1,910	475	125	105	88
25.....	87	172	187	1,110	862	1,050	1,290	1,830	450	125	105	88
26.....	92	159	202	1,630	748	984	1,080	1,590	410	115	96	88
27.....	92	159	454	1,470	694	922	1,010	1,430	370	115	96	88
28.....	92	159	1,250	1,320	862	922	890	1,430	350	105	96	88
29.....	92	172	862	1,250	.....	953	740	1,590	330	105	96	88
30.....	99	202	592	1,050	.....	922	650	1,590	330	105	88	88
31.....	99	.....	521	984	.....	984	.....	1,510	.....	105	88	.....
1899-1900.												
1.....	88	230	1,010	.....	.....	.....	.....	1,050	233	106	83	106
2.....	88	200	830	.....	.....	.....	.....	1,180	203	99	83	106
3.....	88	185	740	.....	.....	.....	.....	1,180	187	99	83	106
4.....	88	185	650	.....	.....	.....	.....	1,180	172	99	83	99
5.....	88	185	550	.....	.....	.....	.....	1,250	172	99	83	99
6.....	88	170	500	.....	.....	.....	.....	1,150	159	99	83	99
7.....	88	170	450	.....	.....	.....	.....	1,050	159	99	83	99
8.....	88	170	450	.....	.....	.....	.....	862	146	99	92	99
9.....	88	170	450	.....	.....	.....	.....	804	146	92	106	99
10.....	88	170	450	.....	.....	.....	.....	776	135	92	92	92
11.....	88	170	450	.....	.....	.....	.....	804	135	92	92	92
12.....	88	170	475	.....	.....	.....	.....	748	135	92	87	92
13.....	88	170	450	.....	.....	.....	.....	694	135	92	87	92
14.....	88	185	450	.....	.....	.....	.....	642	135	87	87	92
15.....	88	200	450	.....	.....	.....	1,970	617	146	87	83	99
16.....	125	200	450	.....	.....	.....	1,970	833	146	87	83	99
17.....	170	200	430	.....	.....	.....	1,850	748	135	87	83	99
18.....	170	330	430	.....	.....	.....	1,710	694	135	87	83	106
19.....	230	410	410	.....	.....	.....	1,590	617	135	87	83	106
20.....	200	410	410	.....	.....	.....	1,510	568	135	87	83	106
21.....	200	370	410	.....	.....	.....	1,400	521	135	87	106	106
22.....	200	290	390	.....	.....	.....	1,290	476	124	87	92	115
23.....	200	290	370	.....	.....	.....	1,180	454	124	87	92	115
24.....	230	260	370	.....	.....	.....	1,110	433	115	83	203	233
25.....	245	260	410	.....	.....	.....	1,020	392	115	83	412	233
26.....	260	260	450	.....	.....	.....	953	392	115	83	233	218
27.....	260	550	450	.....	.....	.....	892	353	106	83	172	187
28.....	275	710	430	.....	.....	.....	833	316	106	83	106	187
29.....	260	950	430	.....	.....	.....	776	281	106	83	106	159
30.....	245	980	430	.....	.....	.....	892	264	106	83	106	146
31.....	230	.....	410	.....	.....	.....	.....	248	.....	83	106	.....

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900-1901.												
1.	135	642	862	521	454	3,560	1,290	1,630	498	233	124	88
2.	146	642	922	498	454	3,500	1,250	1,630	454	233	115	88
3.	146	668	1,050	498	433	2,940	1,250	1,630	412	233	115	88
4.	159	694	1,250	498	392	2,390	1,220	1,670	372	233	115	92
5.	298	642	1,630	476	372	1,970	1,220	1,670	372	233	106	92
6.	264	592	1,320	454	353	1,800	1,180	1,670	353	218	106	99
7.	233	568	1,150	412	334	1,930	1,150	1,670	372	218	106	99
8.	233	544	1,050	392	316	1,930	1,110	1,710	372	218	106	106
9.	233	498	922	372	298	1,840	1,080	1,840	372	218	106	106
10.	203	476	833	353	281	1,760	1,110	1,840	372	218	99	106
11.	187	433	776	334	281	1,670	1,320	1,880	353	203	99	115
12.	187	412	668	617	264	1,550	1,710	1,800	334	203	99	115
13.	172	372	617	2,020	264	1,550	2,020	1,710	334	203	99	115
14.	172	353	592	2,740	264	1,510	1,930	1,590	316	172	99	124
15.	172	316	592	1,970	264	1,470	1,710	1,400	334	172	99	124
16.	159	316	617	1,470	3,910	1,470	1,510	1,290	353	172	92	124
17.	159	298	617	1,252	2,680	1,440	1,590	1,180	353	172	92	124
18.	159	298	617	1,150	1,930	1,360	1,510	1,150	392	159	92	135
19.	172	298	642	1,080	1,550	1,290	1,670	1,080	392	159	92	135
20.	187	316	694	984	1,360	1,250	1,670	1,050	372	159	92	135
21.	203	316	1,220	922	1,150	1,220	1,670	984	334	159	92	135
22.	203	334	1,150	833	1,080	1,360	1,760	922	334	159	92	146
23.	233	334	1,110	776	1,080	1,250	1,760	892	334	159	88	146
24.	248	353	1,050	694	1,470	1,180	1,760	833	316	146	88	146
25.	281	544	984	642	2,060	1,150	1,630	748	316	146	88	159
26.	298	544	862	592	2,240	1,110	1,510	694	298	146	88	159
27.	298	521	804	592	4,160	1,110	1,470	694	298	146	88	159
28.	334	476	721	544	3,910	1,150	1,320	642	264	135	88	159
29.	372	476	617	498	.....	1,150	1,320	592	264	135	88	159
30.	454	694	544	498	.....	1,220	1,440	592	249	124	88	159
31.	642	.....	544	476	.....	1,220	.....	544	.....	124	88	.....
1901-2.												
1.	159	188	203	311	190	890	526	992	957	118	90	82
2.	159	172	203	292	190	858	600	1,340	822	160	90	82
3.	159	172	203	292	190	736	652	1,540	722	325	90	82
4.	159	172	218	311	190	680	736	1,660	600	690	90	82
5.	159	172	233	330	190	600	765	1,620	510	540	90	82
6.	159	172	298	330	216	526	1,100	1,420	450	350	90	82
7.	159	172	334	350	216	479	1,980	1,500	400	260	90	82
8.	159	172	412	350	222	456	2,020	1,580	375	205	82	82
9.	172	188	454	330	502	456	1,820	1,580	325	175	82	82
10.	172	188	433	330	892	479	1,580	1,620	300	160	82	82
11.	159	188	433	330	1,100	502	1,420	1,580	280	160	82	82
12.	159	172	433	330	1,100	550	1,220	1,500	260	145	82	82
13.	159	172	412	311	1,140	502	1,060	1,460	220	145	82	82
14.	159	172	412	311	1,180	456	957	1,420	205	145	82	82
15.	159	172	412	311	1,180	434	858	1,340	190	145	82	82
16.	159	172	412	292	1,180	412	890	1,300	190	130	90	82
17.	159	172	392	292	1,660	456	957	1,260	175	118	90	82
18.	159	172	392	292	1,740	550	1,420	1,180	175	118	90	82
19.	159	172	412	292	1,260	600	1,940	1,500	160	105	82	98
20.	159	188	412	274	992	626	1,660	3,860	160	105	82	98
21.	159	188	617	274	826	600	1,500	3,800	160	105	82	98
22.	172	188	568	274	707	550	1,260	3,300	145	105	82	98
23.	172	188	498	256	652	550	1,100	2,860	145	105	82	98
24.	172	188	498	256	736	550	992	2,460	145	98	82	105
25.	172	188	476	222	1,100	502	890	2,160	130	98	82	105
26.	172	188	476	222	1,060	479	826	1,980	130	98	82	105
27.	172	188	476	216	957	456	826	1,740	118	98	82	118
28.	172	188	454	216	890	456	858	1,580	118	90	82	105
29.	188	203	412	216	.....	434	890	1,460	118	90	82	98
30.	188	203	392	216	.....	456	957	1,260	118	90	82	98
31.	188	.....	353	190	.....	479	.....	1,060	.....	90	82	.....

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902-3.												
1.....	98	106	826	550	680	380	1,530	890	466	132	98	120
2.....	98	115	575	826	570	380	1,210	860	466	132	98	108
3.....	98	115	502	1,740	495	380	1,060	860	386	132	98	120
4.....	98	115	456	2,160	470	360	955	860	386	132	98	135
5.....	98	125	434	1,660	420	340	860	800	346	166	98	150
6.....	98	135	391	1,300	380	320	800	800	346	166	98	180
7.....	98	222	370	1,100	380	300	770	800	306	166	98	180
8.....	105	256	370	957	380	280	770	740	271	166	98	165
9.....	105	256	1,340	858	380	280	830	740	271	146	98	150
10.....	105	239	1,420	796	380	280	770	800	236	132	98	135
11.....	105	222	1,220	736	340	280	740	740	236	98	98	120
12.....	98	206	957	680	300	280	710	740	306	98	98	135
13.....	98	190	796	600	300	340	680	740	271	98	98	120
14.....	98	256	652	550	300	340	650	680	271	98	98	120
15.....	98	256	600	502	300	340	650	620	306	98	98	120
16.....	98	350	526	479	280	360	770	570	271	98	98	120
17.....	98	456	479	456	280	360	920	525	271	98	98	120
18.....	98	479	434	412	280	340	860	530	236	98	98	120
19.....	98	526	412	412	280	340	990	520	236	98	98	120
20.....	98	456	412	412	280	340	920	495	201	98	98	120
21.....	98	434	370	502	280	400	990	495	166	98	98	120
22.....	118	391	330	652	280	445	1,210	495	166	98	98	120
23.....	130	350	330	826	280	545	1,130	520	166	98	98	120
24.....	145	391	330	2,460	320	770	1,130	520	166	98	98	120
25.....	145	412	502	3,100	340	1,020	1,160	495	166	98	150	120
26.....	130	412	1,260	1,950	340	1,100	1,180	470	146	98	150	120
27.....	130	412	1,340	1,450	360	1,290	1,150	470	146	98	120	120
28.....	130	391	992	1,130	380	2,080	990	470	146	98	120	120
29.....	106	391	826	920	-----	2,650	990	495	146	98	120	120
30.....	106	412	707	830	-----	2,040	920	495	146	98	120	120
31.....	106	-----	600	740	-----	1,860	-----	495	-----	98	120	-----
1903-4.												
1.....	120	95	590	250	370	540	1,320	1,490	-----	-----	-----	-----
2.....	120	95	590	250	370	490	1,530	1,440	-----	-----	-----	-----
3.....	120	95	540	250	370	490	1,990	1,540	-----	-----	-----	-----
4.....	150	108	490	250	350	450	1,780	1,540	-----	-----	-----	-----
5.....	210	108	410	250	350	630	1,580	1,490	-----	-----	-----	-----
6.....	180	120	410	250	350	810	2,540	1,440	-----	-----	-----	-----
7.....	180	150	370	250	330	1,880	1,880	1,440	-----	-----	-----	-----
8.....	180	150	330	250	330	3,500	1,880	1,440	-----	-----	-----	-----
9.....	180	150	250	290	330	2,520	2,320	1,440	-----	-----	-----	-----
10.....	150	250	250	330	330	2,010	3,540	1,440	-----	-----	-----	-----
11.....	150	250	250	330	330	1,630	4,060	1,440	-----	-----	-----	-----
12.....	150	330	250	410	330	1,320	4,330	1,440	-----	-----	-----	-----
13.....	150	370	250	590	330	1,090	5,130	1,440	-----	-----	-----	-----
14.....	150	490	250	640	330	1,160	5,330	1,390	-----	-----	-----	-----
15.....	150	450	450	750	370	1,160	4,790	1,390	-----	-----	-----	-----
16.....	150	370	640	690	640	1,090	3,980	1,390	-----	-----	-----	-----
17.....	150	330	490	640	590	1,020	3,480	1,340	-----	-----	-----	-----
18.....	150	290	490	590	540	1,160	3,210	1,340	-----	-----	-----	-----
19.....	150	250	410	450	490	1,180	3,480	1,390	-----	-----	-----	-----
20.....	150	290	410	410	640	1,240	2,760	1,440	-----	-----	-----	-----
21.....	135	1,000	370	410	540	1,120	2,380	1,390	-----	-----	-----	-----
22.....	135	1,160	370	640	490	950	2,000	1,340	-----	-----	-----	-----
23.....	120	930	330	690	750	880	1,640	1,300	-----	-----	-----	-----
24.....	120	810	330	640	750	700	1,540	1,260	-----	-----	-----	-----
25.....	108	750	330	590	690	650	1,590	1,180	-----	-----	-----	-----
26.....	108	690	330	490	690	650	1,740	1,140	-----	-----	-----	-----
27.....	108	690	330	450	640	650	1,880	-----	-----	-----	-----	-----
28.....	95	640	330	410	590	700	1,880	-----	-----	-----	-----	-----
29.....	95	590	330	450	590	1,400	1,700	-----	-----	-----	-----	-----
30.....	95	590	290	370	-----	1,880	1,590	-----	-----	-----	-----	-----
31.....	95	-----	290	370	-----	1,480	-----	-----	-----	-----	-----	-----

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....		110	152	245	300	565	800	414	252	120	56	56
2.....		110	110	245	245	565	885	486	346	120	56	56
3.....		110	110	245	245	565	928	560	314	120	56	56
4.....		110	110	196	245	490	970	560	295	120	56	56
5.....		110	110	196	245	490	1,240	560	282	120	56	56
6.....		110	110	196	245	490	1,240	638	282	120	56	56
7.....		74	110	196	245	425	1,100	638	282	101	56	56
8.....		74	110	196	245	425	970	638	252	101	56	56
9.....		74	110	196	245	392	970	638	222	101	56	56
10.....		74	110	196	245	392	800	638	222	101	56	56
11.....		74	110	196	245	360	638	759	195	82	56	56
12.....		74	110	196	245	360	718	718	168	82	56	56
13.....		74	110	152	245	425	638	638	168	69	56	56
14.....		74	152	152	245	425	560	560	144	69	56	56
15.....	99	110	152	152	245	425	560	523	144	56	56	56
16.....	108	110	152	152	245	425	560	486	144	56	56	56
17.....	118	110	152	152	196	425	523	450	120	56	56	56
18.....	114	110	152	152	196	425	486	414	120	56	56	56
19.....	110	110	152	152	196	425	560	414	120	56	56	56
20.....	110	110	152	152	196	425	638	414	101	56	56	56
21.....	92	110	152	152	196	565	718	346	101	56	56	56
22.....	74	110	152	152	196	565	800	222	101	56	56	56
23.....	74	110	152	300	245	565	800	346	101	56	56	56
24.....	110	110	152	565	300	885	718	450	120	56	56	56
25.....	110	110	152	720	565	720	638	486	130	56	56	56
26.....	110	110	152	565	565	890	560	414	144	56	56	56
27.....	110	110	152	528	565	1,060	486	414	168	56	56	56
28.....	110	152	152	490	565	928	414	380	144	56	56	56
29.....	110	152	196	425	-----	842	346	346	144	56	56	120
30.....	110	152	245	425	-----	800	346	314	144	56	56	120
31.....	110	-----	360	425	-----	720	-----	282	-----	56	56	-----
1905-6.												
1.....	101	82	144	212	426	479	2,200	720	-----	-----	-----	-----
2.....	82	82	168	190	408	479	1,710	638	-----	-----	-----	-----
3.....	69	82	234	190	408	408	1,360	555	-----	-----	-----	-----
4.....	69	82	314	233	408	408	1,360	555	-----	-----	-----	-----
5.....	82	82	295	233	408	408	1,260	555	-----	-----	-----	-----
6.....	82	82	282	320	343	408	1,360	517	-----	-----	-----	-----
7.....	82	82	282	408	284	408	1,760	479	-----	-----	-----	-----
8.....	82	82	282	343	284	595	1,660	408	-----	-----	-----	-----
9.....	82	82	282	314	284	805	1,460	408	-----	-----	-----	-----
10.....	82	82	282	314	258	895	1,360	376	-----	-----	-----	-----
11.....	82	82	168	284	233	725	1,260	376	-----	-----	-----	-----
12.....	82	82	168	343	233	555	985	343	-----	-----	-----	-----
13.....	82	82	168	314	233	479	985	343	-----	-----	-----	-----
14.....	82	82	168	284	233	411	895	343	-----	-----	-----	-----
15.....	82	82	168	284	233	377	985	284	-----	-----	-----	-----
16.....	82	82	168	284	233	343	895	233	-----	-----	-----	-----
17.....	82	82	222	284	288	343	895	233	-----	-----	-----	-----
18.....	82	82	252	284	343	343	895	212	-----	-----	-----	-----
19.....	82	82	252	258	895	288	895	190	-----	-----	-----	-----
20.....	82	82	252	258	805	233	1,170	190	-----	-----	-----	-----
21.....	82	82	282	233	895	233	1,260	190	-----	-----	-----	-----
22.....	82	82	282	233	805	233	1,360	190	-----	-----	-----	-----
23.....	82	82	252	394	720	233	1,170	190	-----	-----	-----	-----
24.....	82	82	222	555	555	555	985	190	-----	-----	-----	-----
25.....	82	82	211	762	555	1,170	985	190	-----	-----	-----	-----
26.....	82	120	195	635	555	1,220	985	190	-----	-----	-----	-----
27.....	82	120	168	555	555	1,870	895	190	-----	-----	-----	-----
28.....	82	120	168	517	479	1,760	895	343	-----	-----	-----	-----
29.....	82	120	168	479	-----	1,460	895	-----	-----	-----	-----	-----
30.....	82	144	168	479	-----	1,980	805	(a)	-----	-----	-----	-----
31.....	82	168	168	444	-----	2,640	-----	-----	-----	-----	-----	-----

^a Maximum discharge estimated at 9,000 to 10,000 second-feet.

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.			183	1,220	1,220	1,450						
2.			183	895	995	1,220						
3.			183	995	995	1,100						
4.			183	1,340	2,020	895						
5.			183	995	3,500	895						
6.			212	720	3,370	895						
7.			420	575	2,380	800						
8.			670	510	2,260	800						
9.			600	450	2,260	800						
10.			480	400	2,380	800						
11.			480	400	2,140	895						
12.			480	350	1,910	800						
13.			420	308	1,560	720						65
14.			370	308	1,450	645						65
15.			370	270	1,450	575						65
16.			320	234	1,450	575						65
17.			320	234	1,340	575						65
18.			320	234	1,220	720						65
19.			320	200	1,450	1,100						65
20.			3,510	200	2,020	2,380						65
21.			4,930	200	2,140	2,020						65
22.			3,240	234	2,140	2,020						65
23.			2,380	234	2,260	1,680						65
24.			2,140	234	2,260	1,340						65
25.			2,260	234	2,500	1,220						65
26.			2,740	234	2,260	995						65
27.			2,260	234	2,020	895						65
28.			2,140	234	1,680	800						65
29.			1,910	270		720						65
30.			1,560	510		645						65
31.			1,450	995		645						
1907-8.												
1.	72	80	132	350	200	575	760	880	308	152	66	52
2.	72	80	132	329	200	510	800	880	289	152	66	52
3.	72	80	120	308	200	510	925	800	289	139	66	52
4.	65	80	120	289	217	450	1,060	760	270	139	58	52
5.	65	80	120	289	217	425	970	720	270	127	58	52
6.	65	80	120	289	217	425	880	720	270	127	58	52
7.	65	80	120	270	234	375	760	682	252	127	58	52
8.	65	80	132	270	234	308	720	645	252	115	58	52
9.	65	80	132	270	234	270	760	610	252	115	58	58
10.	65	80	132	270	234	289	880	575	234	115	58	58
11.	65	80	132	270	252	350	1,560	575	216	115	58	58
12.	65	80	145	270	252	400	1,940	575	216	104	58	58
13.	65	80	170	252	270	720	1,990	575	199	104	58	58
14.	65	80	270	252	270	2,440	1,880	542	199	104	58	58
15.	65	80	252	252	288	8,400	1,880	542	199	104	58	58
16.	65	80	217	252	329	5,700	1,820	645	199	93	52	58
17.	65	80	200	252	375	3,930	1,820	542	182	93	52	66
18.	65	80	185	234	350	2,100	1,820	542	182	93	52	74
19.	65	80	185	234	350	1,880	1,880	510	199	84	52	84
20.	65	80	185	234	329	1,360	1,880	480	216	84	52	84
21.	65	90	185	234	329	1,060	1,880	480	199	84	52	84
22.	65	90	645	217	329	1,060	1,660	480	182	84	52	84
23.	65	100	760	217	350	1,060	1,560	480	182	84	52	84
24.	65	110	2,260	217	375	1,110	1,410	480	182	84	52	74
25.	65	329	1,450	217	400	1,160	1,360	480	166	74	52	74
26.	65	289	1,450	217	450	1,060	1,160	450	166	74	52	66
27.	65	234	1,450	217	542	970	1,060	400	166	74	52	66
28.	65	185	895	217	610	840	970	400	166	74	52	66
29.	65	158	720	217	575	800	925	400	152	74	52	66
30.	80	145	542	200		720	880	375	152	74	52	66
31.	80		425	200		720		350		74	52	

Daily discharge, in second-feet, of Umatilla River at Gibbon, Oreg., for 1896-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	74	139	139	139	280	720	1,160	1,160	645	104	74	45
2	74	139	139	139	270	800	1,050	1,340	575	93	74	45
3	74	139	139	182	270	945	1,050	1,340	542	93	74	58
4	74	127	139	270	270	945	995	1,450	510	93	74	58
5	74	127	139	270	270	895	848	1,100	450	93	66	52
6	74	127	127	252	270	848	760	995	425	93	66	52
7	74	127	127	216	252	800	720	895	400	84	66	52
8	74	127	139	199	252	720	800	800	350	84	66	45
9	74	127	152	199	252	720	895	760	329	84	66	45
10	74	115	152	182	252	645	1,100	760	308	84	66	45
11	74	115	166	166	234	610	1,100	720	289	84	58	66
12	84	115	199	152	234	610	1,100	720	289	84	58	66
13	93	115	199	152	216	720	1,100	720	270	84	58	58
14	139	115	199	139	216	800	1,100	682	252	84	58	52
15	139	115	199	199	234	857	1,050	682	234	74	58	52
16	115	115	182	450	375	945	1,100	645	216	74	58	52
17	104	115	166	800	1,850	1,340	1,220	645	216	74	58	45
18	93	115	166	1,100	1,450	1,100	1,100	645	216	74	58	45
19	104	115	152	2,020	1,100	895	945	645	199	74	52	45
20	104	139	152	2,380	895	760	895	645	199	74	52	58
21	104	152	152	2,140	720	682	800	645	199	74	52	58
22	115	166	139	1,560	645	682	760	575	199	74	52	58
23	115	166	139	1,100	575	645	760	542	182	74	52	58
24	115	166	139	760	542	760	800	542	166	74	52	58
25	115	152	139	645	510	895	800	542	152	74	52	58
26	115	152	139	575	450	1,100	945	575	139	74	52	58
27	139	152	139	480	450	1,220	1,850	1,050	127	84	45	58
28	139	152	139	400	575	1,100	1,850	848	127	166	45	58
29	139	152	139	350	-----	995	1,510	800	115	104	45	58
30	152	139	139	308	-----	995	1,280	720	104	84	45	58
31	152	-----	139	289	-----	1,100	-----	682	-----	74	45	-----
1909-10.												
1	58	93	1,680	152	480	2,670	1,080	600	175	76	50	50
2	58	104	1,340	152	425	3,540	1,080	530	162	76	50	50
3	58	104	895	152	400	3,280	1,040	500	162	76	50	50
4	58	104	610	139	350	3,150	990	565	149	76	50	50
5	66	104	480	139	329	3,030	950	565	138	66	50	50
6	66	104	400	139	289	2,430	1,080	530	138	66	50	50
7	66	104	375	139	270	1,880	1,170	530	138	66	50	50
8	66	104	610	127	252	1,720	1,350	530	127	66	50	50
9	66	104	450	127	252	1,720	1,990	750	116	66	50	50
10	58	104	425	127	234	1,770	1,990	750	116	58	50	50
11	58	104	400	115	234	1,880	1,940	710	116	58	50	50
12	58	104	895	115	234	1,990	1,940	635	106	58	50	50
13	58	104	800	115	234	2,550	1,820	520	106	58	50	50
14	58	104	800	115	234	2,610	1,400	500	106	58	50	50
15	58	104	645	115	234	2,670	1,220	500	106	58	50	58
16	58	104	510	115	234	2,790	1,120	445	106	58	50	58
17	58	127	425	115	234	2,910	1,170	395	106	58	50	58
18	66	199	350	104	252	2,910	1,260	370	106	58	50	58
19	66	308	329	104	252	3,030	1,350	345	96	58	50	58
20	66	848	289	115	252	4,300	1,550	320	96	58	50	58
21	74	645	270	575	252	3,650	1,350	320	96	58	50	58
22	74	3,940	252	510	252	3,520	1,120	298	96	58	50	58
23	74	3,340	234	840	252	2,820	1,080	275	96	58	50	58
24	74	2,380	216	1,660	400	2,540	1,080	235	86	58	50	58
25	74	1,620	199	1,260	400	1,880	950	220	86	58	50	58
26	74	895	199	840	450	1,550	990	205	86	50	50	58
27	74	720	182	645	510	1,450	870	205	86	50	50	58
28	74	610	182	575	610	1,350	790	190	86	50	50	58
29	74	542	166	542	-----	1,260	710	190	76	50	50	58
30	74	1,710	166	510	-----	1,220	670	190	76	50	50	58
31	74	-----	166	510	-----	1,120	-----	175	-----	50	50	-----

NOTE.—Daily discharge determined from many rating curves, most of which were applicable only for short periods.

Monthly discharge of Umatilla River at Gibbon, Oreg., for 1896-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1896.					
July 22-31.....	95	80	86	1,710	B.
August.....	95	75	83	5,100	C.
September.....	95	80	82	4,880	B.
1896-97.					
October.....	145	80	86	5,290	B.
November.....	2,150	125	779	46,400	C.
December.....	1,970	400	785	48,300	C.
January.....	544	412	465	28,600	C.
February.....	1,320	412	862	47,900	C.
March.....	4,220	412	933	57,400	C.
April.....	4,090	1,250	2,270	135,000	B.
May.....	2,340	298	1,090	66,900	B.
June.....	316	177	225	13,400	B.
July.....	334	100	165	10,100	B.
August.....	109	75	92	5,660	B.
September.....	109	75	84	5,000	B.
The year.....	4,220	75	653	470,000	
1897-98.					
October.....	100	83	88	5,410	B.
November.....	642	91	299	17,800	B.
December.....	1,800	316	772	47,500	C.
January.....	1,050	264	482	29,600	C.
February.....	3,730	264	1,000	55,500	C.
March.....	1,320	412	687	42,200	C.
April.....	2,340	544	1,490	88,400	C.
May.....	1,150	334	635	39,000	C.
June.....	568	115	250	14,900	C.
July.....	115	83	97	5,960	C.
August.....	83	74	76	4,670	B.
September.....	83	74	76	4,520	B.
The year.....	3,730	74	496	355,000	
1898-99.					
October.....	99	83	87	5,350	B.
November.....	202	99	135	8,030	B.
December.....	1,250	99	263	16,200	C.
January.....	2,530	202	829	51,000	C.
February.....	1,970	521	1,090	60,500	C.
March.....	1,080	694	866	53,200	C.
April.....	2,450	650	1,360	80,900	C.
May.....	2,360	600	1,350	83,000	C.
June.....	1,470	330	813	48,400	D.
July.....	330	105	177	10,900	D.
August.....	158	80	94.9	5,840	D.
September.....	125	88	92.3	5,490	D.
The year.....	2,530	80	596	429,000	
1899-1900.					
October.....	275	88	155	9,530	D.
November.....	980	170	307	18,300	D.
December.....	1,010	370	485	29,800	D.
April 15-30.....	1,970	776	1,310	41,600	D.
May.....	1,250	248	696	42,800	D.
June.....	233	106	141	8,390	D.
July.....	106	83	90	5,530	D.
August.....	412	83	111	6,820	D.
September.....	233	92	123	7,320	D.
1900-1901.					
October.....	642	135	237	14,600	D.
November.....	964	298	466	27,700	D.
December.....	1,630	544	872	53,600	D.
January.....	2,740	334	811	49,900	D.
February.....	4,160	264	1,200	66,700	D.
March.....	3,560	1,110	1,660	102,000	D.
April.....	2,020	1,080	1,470	87,600	D.
May.....	1,880	544	1,270	77,800	D.
June.....	498	249	350	20,800	D.
July.....	233	124	181	11,100	D.
August.....	124	88	98	6,030	D.
September.....	159	88	125	7,440	D.
The year.....	4,160	88	728	525,000	

Monthly discharge of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1901-2.					
October.....	188	159	166	10,200	D.
November.....	203	172	181	10,800	D.
December.....	617	203	398	24,500	D.
January.....	350	190	284	17,500	D.
February.....	1,740	190	801	44,500	D.
March.....	890	412	541	33,300	D.
April.....	2,020	526	1,140	67,800	C.
May.....	3,860	992	1,770	109,000	C.
June.....	957	118	293	17,400	C.
July.....	690	90	173	10,600	C.
August.....	90	82	84.6	5,200	C.
September.....	118	82	90.0	5,360	C.
The year.....	3,860	82	493	356,000	
1902-3.					
October.....	145	98	107	6,580	B.
November.....	526	106	303	18,000	B.
December.....	1,420	330	670	41,200	B.
January.....	3,100	412	1,020	62,700	C.
February.....	680	280	359	19,900	C.
March.....	2,650	280	672	41,300	C.
April.....	1,530	650	943	56,100	C.
May.....	890	470	636	39,100	C.
June.....	466	146	255	15,200	B.
July.....	166	98	114	7,010	B.
August.....	150	98	105	6,460	C.
September.....	180	108	129	7,680	C.
The year.....	3,100	98	444	321,000	
1903-4.					
October.....	210	95	139	8,660	C.
November.....	1,160	95	420	25,000	C.
December.....	640	250	379	23,300	C.
January.....	750	250	440	27,100	C.
February.....	750	330	476	27,400	D.
March.....	3,020	450	1,170	71,900	C.
April.....	5,330	1,320	2,630	156,000	C.
May 1-26.....	1,540	1,140	1,400	72,200	B.
The period.....				412,000	
1904-5.					
October 15-31.....	118	74	105	3,540	B.
November.....	152	74	105	6,250	B.
December.....	360	110	147	9,040	B.
January.....	720	152	273	16,800	B.
February.....	565	196	284	15,800	B.
March.....	1,060	360	563	34,600	B.
April.....	1,240	346	721	42,900	B.
May.....	759	222	489	30,100	A.
June.....	346	101	182	10,800	A.
July.....	120	56	76.7	4,720	A.
August.....	56	56	56.0	3,440	A.
September.....	120	56	60.3	3,590	A.
The period.....				182,000	
1905-6.					
October.....	101	69	81.8	5,030	A.
November.....	144	82	89.1	5,300	A.
December.....	314	144	220	13,500	A.
January.....	762	190	352	21,600	B.
February.....	895	233	441	24,500	B.
March.....	2,640	233	734	45,100	B.
April.....	2,200	805	1,190	70,800	B.
May 1-28.....	720	190	344	19,100	B.
The period.....				275,000	
1906-7.					
December.....	4,930	183	1,200	73,800	C.
January.....	1,340	200	466	28,700	C.
February.....	3,500	995	1,950	108,000	C.
March.....	2,380	575	1,020	62,700	C.
September 13-30.....	65	65	65	2,320	B.

Monthly discharge of Umatilla River at Gibbon, Oreg., for 1896-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907-8.					
October.....	80	65	66.6	4,100	B.
November.....	329	80	111	6,600	B.
December.....	2,200	120	451	27,700	C.
January.....	350	200	252	15,500	C.
February.....	610	200	318	18,300	C.
March.....	8,400	270	1,350	83,000	C.
April.....	1,990	720	1,330	79,100	B.
May.....	880	350	567	34,900	B.
June.....	308	152	214	12,700	B.
July.....	152	74	101	6,210	B.
August.....	66	52	55.7	3,420	B.
September.....	84	52	63.9	3,800	B.
The year.....	8,400	52	407	295,000	
1908-9.					
October.....	152	74	103	6,330	B.
November.....	166	115	134	7,970	B.
December.....	199	127	152	9,350	B.
January.....	2,380	139	588	36,200	A.
February.....	1,850	216	497	27,600	A.
March.....	1,340	610	866	53,200	A.
April.....	1,850	720	1,050	62,500	A.
May.....	1,450	542	802	49,300	A.
June.....	645	104	281	16,700	A.
July.....	166	74	85.2	5,240	B.
August.....	74	45	58.0	3,570	C.
September.....	66	45	53.9	3,210	C.
The year.....	2,380	45	389	281,000	
1909-10.					
October.....	74	58	65.7	4,040	C.
November.....	3,940	93	651	38,700	B.
December.....	1,680	166	482	29,600	B.
January.....	1,660	104	354	21,800	B.
February.....	610	234	314	17,400	B.
March.....	4,300	1,120	2,430	149,000	B.
April.....	1,990	670	1,240	73,800	B.
May.....	750	175	423	26,000	B.
June.....	175	76	111	6,600	B.
July.....	76	50	60.1	3,700	A.
August.....	50	50	50.0	3,070	A.
September.....	58	50	54.3	3,230	A.
The year.....	4,300	50	520	377,000	

UMATILLA RIVER AT PENDLETON, OREG.

Location.—In sec. 10, T. 2 N., R. 32 E., at Main Street Bridge, in the town of Pendleton.

Records presented.—February, 1891, to July, 1892; May 22, 1903, to March 21, 1906.

Drainage area.—640 square miles.

Gage.—Vertical staff fastened to center pier of bridge.

Channel.—Gravel; shifts somewhat.

Discharge measurements.—Made from different bridges in vicinity of station or, at low water, by wading.

Diversions.—Byers Mill ditch diverts water about 1½ miles above station and returns it to river about 200 feet above gage. Considerable fluctuation in the discharge is caused by unsteady operation of mill. The Farmers Mill ditch diverts water just above gage and returns it about 4,000 feet below; prior to June, 1904, it diverted about 40 second-feet; after that the quantity varied.¹

¹ For records of this ditch see p. 254.

Accuracy.—Results for 1903 and 1904, fair; for 1905, good. Discharge for June to December, 1904, can not be computed, as most of the flow was diverted in the Farmers' Mill ditch, no record of which is available.

Cooperation.—Records for 1891-92 furnished by Mr. A. L. Adams, chief engineer of the Umatilla Irrigation Co.; accuracy of records not known.

The following measurement was made by W. T. Trowbridge:

January 24, 1894: Gage height on gage of Umatilla Irrigation Co., 1.53 feet; discharge, 239 second-feet.

Discharge measurements of Umatilla River above intake of Byers Mill ditch, at Pendleton, Oreg., in 1903-1905.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 20	J. H. Lewis.....	.....	63	Oct. 19	W. C. Sawyer.....	.....	72
21	J. T. Whistler.....	.....	61	Nov. 15	R. S. Hall.....	.....	79
Aug. 2	.....do.....	0.30	39	17	.....do.....	.....	56
Sept. 6	.....do.....	.58	60	17	.....do.....	.....	63
1905.				Dec. 7	.....do.....	.....	264
Aug. 28	Sawyer and Larder.....	.....	36.9	7	.....do.....	.....	273
Sept. 9	W. C. Sawyer.....	.....	40.4	26	.....do.....	.....	237

Discharge measurements of Umatilla River, including Farmers Mill ditch, at Pendleton, Oreg., in 1903-1906.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1904.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 22	Huber and Davis.....	1.90	534	Mar. 9	H. A. Yates.....	6.45	5,640
25	.....do.....	1.80	369	23	.....do.....	2.95	1,430
29	.....do.....	1.90	402	Apr. 13	Brainard and Saxton..	7.05	5,600
June 12	J. T. Whistler.....	1.30	204	May 24	W. C. Sawyer.....	2.70	1,180
13	F. Temple.....	1.35	227	Aug. 14	.....do.....	.95	28.0
July 10	J. H. Lewis.....	.90	94	14	.....do.....	.95	28.5
Oct. 4	Lewis and Yates.....	1.10	92	1906.			
26	.....do.....	1.28	116	Jan. 31	R. S. Hall.....	.....	582
Nov. 24	.....do.....	3.70	1,700	Feb. 3	.....do.....	4.48	540
Dec. 2	H. A. Yates.....	3.20	1,460	14	.....do.....	4.20	253
1904.				26	.....do.....	4.78	903
Feb. 18	H. A. Yates.....	2.80	1,060	Mar. 21	.....do.....	4.28	317
Mar. 7	.....do.....	4.58	2,740				

Discharge measurements of Umatilla River, not including Farmers Mill ditch, at Pendleton, Oreg., in 1904-5.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 28	W. C. Sawyer.....	1.90	570	Feb. 24	Lewis and Yates.....	4.19	217
June 7	.....do.....	2.00	492	27	W. C. Sawyer.....	4.58	495
12	.....do.....	1.25	6	Mar. 24	H. S. Williams.....	4.99	701
1905.				28	Lewis and Yates.....	5.20	1,140
Jan. 28	Williams and Yates....	4.60	529	June 8	W. C. Sawyer.....	4.26	251
				26	Sawyer and King.....	4.17	162

Daily gage height, in feet, of Umatilla River at Pendleton, Oreg., for 1903-1905.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.	
1903.						1903.						
1.		1.80				16.		1.10	0.70			
2.			0.80	0.30		17.		1.10				
3.						18.		1.05				
4.						19.						
5.			.93			20.		1.00			1.20	
6.		1.45	.95		0.58	21.		1.00				
7.		1.35	.88			22.	1.90	1.00				
8.		1.35	.85			23.	1.80	1.00				
9.		1.30	.88			24.	1.80	1.00				
10.		1.30	.90			25.	1.80	.90				
11.		1.27				26.	1.80					
12.		1.30	.70			27.		1.90				
13.		1.32				28.		1.90				
14.		1.22				29.		1.90	.85			
15.		1.15				30.		1.80		.60		
						31.		1.80				
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.		1.20	3.11	1.75	1.90	2.90	4.00	3.38	1.82	1.25		
2.		1.23	3.20	1.70	1.85	2.95	4.15	3.18	1.92	1.25		
3.		1.25	2.91	1.65	1.80	2.85	4.72	3.42	2.05	1.41		
4.	1.08	1.24	2.60	1.65	1.80	2.80	4.52	3.42	2.08	1.25		0.88
5.		1.22	2.38	1.65	1.90	2.80	4.28	3.30	2.05	1.30		
6.		1.28	2.20	1.60	1.90	3.18	5.22	3.10	2.05	1.20		
7.		1.41	2.00	1.60	1.90	4.62	4.75	3.10	2.02	1.20		
8.		1.45	1.90	1.67	1.85	6.60	4.35	2.95	2.00	1.20		
9.		1.48	1.80	1.68	1.80	6.35	4.85	2.98	1.92	1.20		
10.		1.66	1.71	1.75	1.70	5.08	5.80	3.10	1.90	1.20		
11.		1.71	1.70	2.15	1.70	4.32	6.70	3.12	1.85	1.20		
12.		2.19	1.65	2.37	1.75	3.75	6.60	3.15	1.75	1.25		
13.		2.17	1.65	2.95	1.75		7.14	3.15	1.70	1.15		
14.		2.51	1.65	2.90	1.70	3.10	7.04	3.08	1.65		0.95	
15.		2.90	1.65	3.23	1.72	3.40	6.74	3.00	1.55			
16.		2.61	2.27	3.17	3.05	3.20	5.90	2.80	1.50			
17.		2.40	3.10	3.05	3.02	3.18	5.32	2.78	1.50			
18.		2.29	2.73	2.95	2.80	3.32	5.08	2.75	1.45			
19.			2.50	2.72	2.70	3.35	5.45	2.90	1.45			
20.			2.60	2.50	2.60	3.50	5.75	2.95	1.38			
21.		2.86	2.65	2.35	2.50	3.45	5.28	2.95	1.30		.85	
22.	1.35	4.85	2.90	2.53	2.82	3.20	4.85	2.75	1.30			
23.	1.32	3.87	2.87	2.87	3.30	3.05	4.20	2.70	1.30			
24.	1.30	3.68	2.65	2.85	3.28	2.75	3.72	2.65	1.30			
25.	1.28	3.28	2.50	2.60	3.20	2.60	3.65	2.38	1.30			
26.	1.28	3.00	2.25	2.55	3.18	2.50	4.28	2.20	1.30			
27.	1.28	3.03	2.15	2.35	3.30	2.50	4.52	2.10	1.25			
28.	1.27	2.95		2.15	3.10	2.60	4.40	1.95	1.25			
29.	1.25	2.80		2.05	2.92	3.90	4.20	1.85	1.25			
30.		2.76	1.90	2.00		5.10	3.72	1.78	1.25			
31.	1.23		1.80	1.95		4.45		1.75		1.00		

Daily gage height, in feet, of Umatilla River at Pendleton, Oreg., for 1903-1905—Contd.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1904-5.							
1		4.05	4.35	4.52	4.99	4.50	4.45
2		4.00	4.28	4.50	5.21	4.45	4.40
3		4.00	4.23	4.52	5.25	4.50	4.37
4		3.98	4.19	4.52	5.15	4.60	4.35
5		3.97	4.14	4.52	5.22	4.70	4.33
6		3.95	4.11	4.50	5.30	4.73	4.30
7		3.92	4.10	4.49	5.25	4.72	4.28
8		3.90	4.09	4.42	5.15	4.67	4.26
9		3.90	4.08	4.38	5.05	4.80	4.24
10		3.90	4.08	4.35	4.95	4.78	4.20
11		3.90	4.10	4.38	4.85	4.82	4.18
12		3.90	4.00	4.37	4.83	4.85	
13		3.80	4.10	4.32	4.78	4.80	
14		3.80	4.05	4.40	4.75	4.75	
15		3.86	4.00	4.40	4.65	4.68	
16		3.84	4.00	4.38	4.65	4.65	
17		3.87	4.03	4.38	4.65		
18		3.88	4.02	4.38	4.65	4.55	
19		3.88	4.00	4.38	4.63	4.50	
20		3.88	4.02	4.39	4.77	4.45	
21		3.90	4.02	4.48	4.80	4.45	
22			4.07	4.58	4.80	4.40	
23		4.00	4.10	4.62	4.85	4.42	
24	3.75	4.48	4.19	5.00	4.82	4.50	
25	3.80	4.78	4.39	4.98	4.78	4.55	
26		4.61	4.56	5.33	4.75	4.52	
27		4.60	4.58	5.45	4.66	4.55	
28		4.61	4.50	5.30	4.60	4.50	
29		4.59		5.12	4.55	4.50	
30	3.90	4.50		5.05	4.52	4.45	
31	4.00	4.41				4.45	

Daily discharge, in second-feet, of Umatilla River at Pendleton, Oreg., for 1903-1905.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1		460				16		140	70		
2			78	39		17		140			
3						18		127			
4						19					
5			100			20		114	63		175
6		272	104		60	21		114	61		
7		230	91			22	530	114			
8		230	86			23	460	114			
9		210	91			24	460	114			
10		210	94			25	460	94			
11		200				26	460				
12		210	70			27	530				
13		218				28	530				
14		182				29	530	86			
15		158				30	460			63	
						31	460				

Daily discharge, in second-feet, of Umatilla River at Pendleton, Oreg., for 1903-1905—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.
1903-4.								
1.....		102	1,270	295	370	1,080	2,380	1,780
2.....		110	1,350	270	345	1,120	2,530	1,600
3.....		115	1,090	248	320	1,040	3,130	1,820
4.....	92	112	840	248	320	1,000	2,910	1,820
5.....		107	666	248	370	1,000	2,660	1,710
6.....		123	540	225	370	1,330	3,680	1,530
7.....		159	420	225	370	2,830	3,160	1,530
8.....		172	370	256	345	5,320	2,730	1,400
9.....		182	320	261	320	5,040	3,280	1,420
10.....		252	275	295	270	3,530	4,380	1,530
11.....		275	270	510	270	2,700	5,490	1,550
12.....		534	248	659	295	2,130	5,360	1,580
13.....		522	248	1,120	295	1,830	6,080	1,580
14.....		768	248	1,080	270	1,530	5,940	1,510
15.....		1,080	248	1,380	280	1,800	5,540	1,440
16.....		848	589	1,320	1,220	1,620	4,500	1,270
17.....		680	1,260	1,220	1,190	1,600	3,800	1,250
18.....		603	944	1,120	1,000	1,730	3,530	1,230
19.....		752	760	936	920	1,760	3,960	1,350
20.....		901	840	760	840	1,890	4,320	1,400
21.....		1,050	880	645	760	1,840	3,760	1,400
22.....	142	3,110	1,080	784	1,020	1,620	3,280	1,230
23.....	134	2,010	1,060	1,060	1,440	1,480	2,580	1,190
24.....	128	1,820	880	1,040	1,420	1,230	2,100	1,150
25.....	123	1,520	760	840	1,350	1,110	2,030	936
26.....	123	1,170	575	800	1,330	1,030	2,660	810
27.....	123	1,200	510	645	1,440	1,030	2,910	740
28.....	120	1,120	460	510	1,260	1,110	2,780	635
29.....	115	1,000	417	450	1,100	2,280	2,580	565
30.....	112	968	370	420	.....	3,550	2,100	518
31.....	110	.....	320	395	.....	2,840	.....	500

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1905.							1905.						
1.....	198	380	561	1,020	480	426	16.....	114	127	420	632	627	.....
2.....	172	325	542	1,310	432	383	17.....	121	137	420	632	576	.....
3.....	172	283	561	1,370	480	363	18.....	125	129	420	627	525	.....
4.....	164	253	561	1,230	578	346	19.....	125	118	420	607	476	.....
5.....	160	216	561	1,320	684	329	20.....	125	128	429	762	432	.....
6.....	152	193	542	1,450	717	303	21.....	137	131	518	800	430	.....
7.....	140	183	525	1,380	707	286	22.....	168	160	622	795	389	.....
8.....	133	176	464	1,230	655	271	23.....	197	183	687	850	405	.....
9.....	132	167	420	1,090	798	254	24.....	534	250	1,130	820	476	.....
10.....	132	167	392	972	773	224	25.....	866	440	1,090	776	529	.....
11.....	132	185	416	854	820	210	26.....	684	605	1,540	739	504	.....
12.....	132	124	406	830	858	.....	27.....	648	623	1,710	643	531	.....
13.....	107	213	361	776	800	.....	28.....	659	545	1,460	580	480	.....
14.....	107	187	439	739	742	.....	29.....	634	.....	1,190	527	479	.....
15.....	119	141	439	634	664	.....	30.....	540	.....	1,090	498	432	.....
							31.....	450	.....	1,050	.....	429	.....

NOTE.—Daily discharge determined as follows: May 22 to Sept. 20, 1903, Oct. 22 to Mar. 8, 1904, and Mar. 9 to May 31, 1904, from three fairly well-defined rating curves; diversion of Farmers Mill ditch during these periods estimated at 40 second-feet; no discharge computed for June and July, 1904; discharges Jan. 1 to June 11, 1905, determined from curve well defined between 150 and 1,500 second-feet; estimates presented include the measured discharge of the Farmers Mill ditch. (See p. 255.)

Monthly discharge of Umatilla River at Pendleton, Oreg., for 1891-92.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1891.					
February.....	320	140	180	10,000	
March.....	2,250	140	1,050	64,600	
April.....	2,250	770	1,430	85,100	
May.....	520	140	408	25,100	
June.....	370	140	202	12,000	
July.....	770	60	300	18,400	
August.....	60	60	60	3,690	
September.....	55	35	45	2,680	
The period.....				222,000	
1891-92.					
October.....	65	35	50	3,070	
November.....	580	60	172	10,200	
December.....	520	410	510	31,400	
January.....	830	470	557	36,100	
February.....	2,030	630	1,120	64,400	
March.....	2,800	1,000	1,750	108,000	
April.....	3,870	1,000	1,710	102,000	
May.....	3,250	920	2,090	129,000	
June.....	920	125	455	27,100	
July.....	125	45	74	4,550	
The period.....				516,000	

NOTE.—Estimates furnished by Mr. A. L. Adams, chief engineer of the Umatilla Irrigation Co. No records of discharge measurements or gage readings are available.

Monthly discharge of Umatilla River at Pendleton, Oreg., for 1903-1905.

Month.	Discharge in second-feet.			Run-off total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October 22-31.....	142	110	123	2,440	B.
November.....	3,110	102	779	46,400	B.
December.....	1,350	248	649	39,900	B.
January.....	1,380	225	654	40,200	B.
February.....	1,440	270	728	41,900	B.
March.....	5,320	1,000	1,970	121,000	B.
April.....	6,080	2,030	3,540	211,000	B.
May.....	1,820	500	1,290	79,300	B.
The period.....				582,000	
1905.					
January.....	866	107	267	16,400	B.
February.....	623	118	242	13,400	B.
March.....	1,710	361	690	42,400	B.
April.....	1,450	498	883	52,500	B.
May.....	858	389	578	35,500	B.
June 1-11.....	426	210	309	6,740	B.
The period.....				167,000	

FARMERS MILL DITCH AT PENDLETON, OREG.

Location.—In sec. 10, T. 2 N., R. 32 E., near intake, opposite gage on Umatilla River.

Records presented.—January 1 to June 12, 1905.

Gage.—Vertical staff.

Channel.—Earth section of canal; fairly permanent.

Discharge measurements.—Made from footbridge at gage or by wading.

Accuracy.—Results good.

Discharge measurements of Farmers Mill ditch at Pendleton, Oreg., in 1905.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
Feb. 24	Lewis and Yates.....	<i>Feet.</i> 0.82	<i>Sec. ft.</i> 60.1	Apr. 6	Sawyer and Yates.....	<i>Feet.</i> 1.66	<i>Sec. ft.</i> 201
27	Sawyer and Yates.....	1.35	121				

Daily gage height, in feet, and discharge, in second-feet, of Farmers Mill ditch at Pendleton, Oreg., for 1905.

Day.	January.		February.		March.		April.		May.		June.	
	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
1.....	1.10	88	0.93	70	1.29	113	1.31	117	0.70	50	0.50	36
2.....	1.09	87	.92	69	1.28	112	1.55	164	.60	42	.45	33
3.....	1.09	87	.85	62	1.29	113	1.58	171	.70	50	.51	37
4.....	1.08	86	.81	59	1.29	113	1.50	153	.80	58	.50	36
5.....	1.08	86	.76	55	1.29	113	1.55	164	.97	74	.48	35
6.....	1.07	84	.71	51	1.28	112	1.65	188	1.00	77	.45	33
7.....	1.06	83	.68	48	1.22	103	1.61	178	1.00	77	.40	30
8.....	1.06	83	.65	46	1.18	98	1.48	149	.95	72	.38	29
9.....	1.05	82	.60	42	1.08	86	1.35	123	1.10	88	.34	26
10.....	1.05	82	.60	42	1.05	82	1.28	112	1.06	83	.30	24
11.....	1.05	82	.70	50	1.05	82	1.15	94	1.12	90	.28	23
12.....	1.05	82	.55	39	1.03	80	1.12	90	1.13	98	.28	23
13.....	1.05	82	1.01	78	.98	75	1.08	86	1.12	90	.....	.....
14.....	1.05	82	1.00	77	1.11	89	1.02	79	1.05	82	.....	.....
15.....	1.02	79	.78	56	1.11	89	.92	69	.95	72	.....	.....
16.....	1.02	79	.60	42	1.08	86	.90	67	.85	62	.....	.....
17.....	1.02	79	.52	37	1.08	86	.90	67	.....	56	.....	.....
18.....	1.03	80	.46	34	1.08	86	.85	62	.70	50	.....	.....
19.....	1.03	80	.45	33	1.08	86	.82	60	.65	46	.....	.....
20.....	1.03	80	.45	33	1.09	87	1.05	82	.60	42	.....	.....
21.....	1.09	87	.50	36	1.23	104	1.12	90	.57	40	.....	.....
22.....	.....	100	.57	40	1.33	120	1.10	88	.55	39	.....	.....
23.....	1.28	112	.67	48	1.48	149	1.12	90	.55	39	.....	.....
24.....	1.33	120	.78	56	1.76	217	1.12	90	.65	46	.....	.....
25.....	1.60	176	1.18	98	1.70	201	1.08	86	.75	54	.....	.....
26.....	1.51	155	1.34	121	1.86	243	1.02	79	.78	56	.....	.....
27.....	1.38	128	1.34	121	1.88	248	.92	69	.78	56	.....	.....
28.....	1.39	130	1.30	115	1.70	201	.83	60	.70	50	.....	.....
29.....	1.35	123	.....	.....	1.49	151	.73	52	.69	49	.....	.....
30.....	1.27	110	.....	.....	1.38	128	.70	50	.60	42	.....	.....
31.....	1.13	92	.....	.....	.....	122	.....	.....	.55	39	.....	.....

NOTE.—Discharge determined from a rating curve well defined between 40 and 200 second-feet. Discharge interpolated for days on which gage was not read.

Monthly discharge of Farmers Mill Ditch River at Pendleton, Oreg., for 1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
January.....	176	79	96.3	5,920	B.
February.....	121	33	59.2	3,290	B.
March.....	248	75	122	7,500	B.
April.....	188	50	101	6,010	B.
May.....	98	39	60.3	3,710	B.
June 1-12.....	37	23	30.4	723	B.
The period.....	.....	.....	.....	27,200	.....

UMATILLA RIVER AT YOAKUM, OREG.

Location.—In sec. 2, T. 2 N., R. 30 E., at the Yoakum wagon bridge, 18 miles below Pendleton and half a mile east of the Yoakum station of the Oregon-Washington Railroad & Navigation Co.

Records presented.—May 5, 1903, to September 30, 1910.

Drainage area.—1,200 square miles.

Gage.—Vertical staff spiked to right abutment of highway bridge; datum unchanged.

Channel.—Gravel; shifts in extreme floods; one channel at all stages; left bank overflows during extreme floods; control composed of lava boulders.

Discharge measurements.—Made from upstream side of highway bridge or, at low water, by wading.

Winter flow.—River occasionally freezes for short periods.

Artificial control.—Summer flow affected by diversions for irrigation and by the release of stored water from the Furnish reservoir, 5 miles upstream.

Accuracy.—Results good.

Cooperation.—Station maintained in cooperation with the United States Reclamation Service.

Discharge measurements of Umatilla River at Yoakum, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
				<i>Fect. Sec. ft.</i>			
1903.		<i>Fect.</i>	<i>Sec. ft.</i>	1905.		<i>Fect.</i>	<i>Sec. ft.</i>
May 5	N. S. Dils.....	5.70	1,400	Oct. 21	Sawyer and Hall.....	3.12	74
26	F. W. Huber.....	4.50	386	Dec. 12	R. S. Hall.....	3.98	287
June 15	Whistler and Temple..	3.80	218				
July 3	J. H. Lewis.....	3.25	96	1906.			
Sept. 5	.....	2.95	56	Mar. 19	R. S. Hall.....	4.45	516
Oct. 9	.....	3.90	248	Apr. 20	J. C. Stevens.....	5.98	1,570
23	.....	3.52	146	June 2	R. S. Hall.....	8.30	4,780
				July 11	.....	3.20	93
1904.				Nov. 26	H. D. McGlashan.....	4.05	284
Mar. 30	II. A. Yates.....	8.50	5,220				
Apr. 12	.....	9.65	6,580	1907.			
28	W. C. Sawyer.....	7.15	3,120	May 7	I. E. Oakes.....	5.54	1,120
May 20	.....	5.55	1,450	Sept. 10	E. F. Kreigsman.....	3.01	57
31	.....	4.30	480				
July 31	.....	3.36	138	1908.			
Sept. 3	.....	2.84	40	Mar. 19	J. C. Stevens.....	7.20	3,250
				June 5	H. D. McGlashan.....	3.90	278
1905.				Oct. 13	L. R. Allen.....	3.02	55
Feb. 25	J. H. Lewis.....	4.28	444				
Mar. 24	Lewis and Yates.....	5.48	1,180	1909.			
May 8	W. C. Sawyer.....	4.93	856	Mar. 12	H. D. McGlashan.....	5.20	937
June 30	.....	3.37	175				
Aug. 18	.....	2.66	24	1910.			
Sept. 1	F. C. Dillard.....	2.98	54	Aug. 31	R. W. Davenport.....	2.99	28.1
Oct. 1	W. C. Sawyer.....	3.00	60	Sept. 10	F. C. Ebert.....	3.02	26.9

Daily gage height, in feet, of Umatilla River at Yoakum, Oreg., for 1903-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
						1903.					
1		4.20	3.30	2.90		16	4.90	4.15	3.00		3.70
2		4.20	3.30	2.90		17	4.80	3.60	3.00		3.60
3		4.20	3.20	2.90		18	4.70	3.60	3.00		3.60
4		4.10	3.20	2.90		19	4.60	3.60	3.00		3.50
5	5.70	4.10	3.30	2.90	2.95	20	4.50	3.50	3.00		3.50
6	5.70	4.00	3.20	2.90	3.00	21	4.40	3.50	3.00		3.40
7	5.60	3.90	3.20	2.90	3.00	22	4.40	3.40	3.00		3.40
8	5.50	3.80	3.20	2.90	3.10	23	4.30	3.40	3.00		3.30
9	5.30	3.70	3.20	2.80	3.10	24	4.30	3.40	3.00		3.30
10	5.30	3.70	3.20	2.80	3.10	25	4.20	3.40	3.00		3.20
11	5.10	3.70	3.20	2.80	3.20	26	4.20	3.30	3.00		3.30
12	5.10	3.70	3.10	2.80	3.30	27	4.20	3.30	3.00		3.30
13	5.10	3.70	3.10	2.70	3.50	28	4.30	3.30	3.00		3.30
14	5.10	3.60	3.00	2.70	4.00	29	4.30	3.30	2.90		3.20
15	5.00	3.80	3.00	2.70	3.80	30	4.30	3.30	2.90		3.20
						31	4.20		2.90		

Daily gage height, in feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1	3.20	3.40	5.70	4.40	4.50	6.00	-----	6.30	4.30	3.10	2.80	2.80
2	3.20	3.40	5.90	4.30	4.50	5.90	-----	6.60	4.30	3.10	2.80	2.80
3	3.10	3.40	5.60	4.30	4.40	5.80	-----	6.60	4.30	3.10	2.70	2.80
4	3.30	3.40	5.40	4.30	4.30	5.80	-----	6.60	4.30	3.80	2.70	2.80
5	3.40	3.40	5.20	4.30	4.20	5.80	-----	6.50	4.30	3.70	2.70	2.90
6	3.50	3.40	4.90	4.30	4.20	6.00	-----	6.40	4.40	3.60	2.70	2.90
7	3.90	3.40	4.60	4.30	4.30	7.10	-----	6.30	4.30	3.60	2.70	2.90
8	3.90	3.60	4.50	4.40	4.50	9.70	-----	5.80	4.30	3.50	2.70	2.90
9	3.90	3.70	4.40	4.40	4.50	9.00	-----	5.80	4.20	3.50	2.70	2.90
10	3.90	3.80	4.30	4.50	4.50	8.70	-----	6.00	4.10	3.50	2.70	2.90
11	3.80	4.00	4.30	4.90	4.60	8.20	-----	6.00	4.00	3.40	2.70	2.90
12	3.80	4.20	4.30	5.10	4.60	7.00	-----	5.90	4.00	3.50	2.70	2.90
13	3.80	4.30	4.30	5.60	4.60	6.40	-----	5.80	4.00	3.40	2.70	2.90
14	3.80	4.50	4.20	5.70	4.60	6.30	-----	5.60	3.90	3.40	2.70	2.90
15	3.80	5.20	4.20	6.10	4.70	6.50	-----	5.50	3.80	3.40	2.70	2.90
16	3.70	4.80	4.60	6.00	6.00	6.40	-----	5.40	3.80	3.40	2.70	2.90
17	3.60	4.60	5.80	6.00	6.10	6.30	-----	5.40	3.60	3.40	2.70	2.90
18	3.50	4.50	5.50	5.90	5.90	6.40	-----	5.50	3.50	3.30	2.70	2.90
19	3.50	4.40	5.30	5.70	5.70	6.40	-----	5.50	3.40	3.30	2.70	2.90
20	3.60	4.90	5.40	5.60	5.50	6.40	-----	5.40	3.40	3.30	2.70	2.90
21	3.60	5.90	5.80	5.40	5.60	6.30	-----	5.40	3.40	3.20	2.70	3.00
22	3.60	7.00	5.90	5.20	6.20	6.20	-----	5.40	3.30	3.20	2.80	3.00
23	3.60	6.50	5.90	5.00	6.40	6.20	-----	5.20	3.30	3.10	2.80	3.30
24	3.50	6.40	5.0	5.30	6.50	6.20	-----	5.10	3.30	3.00	2.80	3.20
25	3.50	6.00	5.60	5.40	6.40	6.10	-----	4.90	3.30	3.00	2.80	3.10
26	3.50	5.80	5.60	5.30	6.40	5.70	-----	4.70	3.30	3.00	2.80	3.00
27	3.40	5.80	5.40	5.10	6.30	5.70	-----	4.60	3.20	2.90	2.80	3.00
28	3.40	5.70	5.10	5.00	6.20	5.90	7.10	4.60	3.10	2.90	2.80	3.00
29	3.40	5.60	4.80	4.90	6.10	7.70	6.70	4.50	3.10	2.90	2.80	3.00
30	3.40	5.50	4.60	4.70	-----	8.40	6.60	4.40	3.10	2.80	2.80	3.00
31	3.40	-----	4.50	4.70	-----	7.50	-----	4.40	-----	2.80	2.80	-----
1904-5.												
1	3.00	3.20	3.20	4.0	4.3	4.5	5.5	4.4	4.1	3.3	2.6	2.7
2	3.00	3.20	3.20	4.0	4.2	4.6	6.1	4.3	4.1	3.1	2.6	2.7
3	3.00	3.20	3.20	3.9	4.1	4.6	6.0	4.4	4.1	3.1	2.6	2.7
4	3.00	3.20	3.20	3.9	4.0	4.6	6.0	4.7	4.1	3.1	2.6	2.7
5	3.00	3.20	3.20	3.9	4.0	4.6	6.0	5.0	4.1	3.1	2.6	2.7
6	3.00	3.20	3.20	3.9	3.9	4.6	6.0	5.0	4.1	3.0	2.6	2.7
7	3.00	3.20	3.20	3.9	3.9	4.6	6.0	5.0	4.1	3.0	2.6	2.7
8	3.00	3.20	3.20	3.8	3.8	4.5	6.0	4.9	3.9	3.0	2.6	2.7
9	3.00	3.20	3.20	3.7	3.8	4.4	5.7	5.2	3.9	3.0	2.6	2.75
10	3.00	3.20	3.20	3.7	3.7	4.4	5.6	5.2	3.9	3.0	2.6	2.75
11	3.20	3.20	3.20	3.7	3.6	4.4	5.4	5.2	3.8	3.0	2.6	2.75
12	3.10	3.20	3.20	3.7	3.5	4.4	5.2	5.3	3.7	3.0	2.6	3.12
13	3.10	3.20	3.20	3.6	3.5	4.4	5.1	5.2	3.7	3.0	2.6	3.5
14	3.20	3.20	3.20	3.5	3.5	4.4	5.0	5.0	3.6	3.0	2.6	2.8
15	3.30	-----	3.20	3.5	3.5	4.4	4.9	4.9	3.5	3.0	2.6	2.9
16	3.30	3.20	3.20	3.5	3.5	4.4	4.9	4.7	3.4	3.0	2.6	2.9
17	3.40	3.20	3.20	3.5	3.5	4.4	4.8	4.7	3.4	3.0	2.7	2.9
18	3.30	3.20	3.30	3.5	3.5	4.4	4.9	4.6	3.4	2.9	2.7	2.9
19	3.30	3.20	3.30	3.5	3.9	4.4	5.0	4.5	3.3	2.9	2.7	2.9
20	3.30	3.20	3.40	3.6	3.7	4.4	5.0	4.4	3.2	2.9	2.7	2.9
21	3.30	3.20	3.40	3.6	3.6	4.5	5.0	4.4	3.2	2.9	2.7	2.9
22	3.30	3.20	3.40	3.7	3.5	4.7	5.0	4.3	3.2	2.9	2.7	2.9
23	3.20	3.20	3.40	3.8	3.6	4.8	5.0	4.3	4.0	2.8	2.7	2.9
24	3.20	3.20	3.40	4.3	4.0	5.4	5.0	4.4	3.6	2.8	2.7	2.9
25	3.20	3.20	3.40	4.8	4.3	6.5	5.0	4.4	3.5	2.7	2.7	2.9
26	3.20	3.20	3.40	4.8	4.4	5.9	4.9	4.4	3.4	2.7	2.7	3.1
27	3.20	3.20	3.40	4.7	4.4	6.2	4.6	4.3	3.4	2.7	2.7	3.2
28	3.20	3.20	3.40	4.7	4.4	6.0	4.6	4.3	3.4	2.6	2.7	3.0
29	3.20	3.20	3.50	4.5	-----	5.8	4.5	4.2	3.4	2.6	2.7	3.0
30	3.20	3.20	3.70	4.4	-----	5.5	4.4	4.2	3.2	2.6	2.7	3.0
31	3.20	-----	3.80	4.3	-----	5.5	-----	4.1	-----	2.6	2.7	-----

Daily gage height, in feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	3.0	3.3	3.4	4.3	5.3	5.3	8.05	5.0	9.5	3.7	2.7	2.8
2.....	3.0	3.3	3.5	4.3	5.1	5.3	7.25	5.0	8.0	3.6	2.7	2.8
3.....	3.0	3.3	3.6	4.1	5.0	5.2	7.0	4.9	7.4	3.5	2.7	2.8
4.....	3.0	3.3	4.1	4.1	4.8	5.2	7.1	4.9	7.4	3.5	2.7	2.8
5.....	3.0	3.3	4.1	4.1	4.6	5.1	7.2	4.7	7.3	3.4	2.7	2.8
6.....	3.1	3.3	4.1	4.2	4.5	5.0	7.2	4.7	7.2	3.3	2.7	2.8
7.....	3.2	3.3	4.1	4.6	4.5	4.9	7.2	4.5	6.9	3.3	2.7	2.8
8.....	3.2	3.3	4.3	4.6	4.4	5.1	7.2	4.4	6.7	3.2	2.7	2.8
9.....	3.2	3.3	4.3	4.04	4.4	5.5	7.3	4.4	6.5	3.1	2.7	2.8
10.....	3.1	3.2	4.3	4.2	4.3	5.7	6.8	4.3	6.2	3.1	2.7	2.8
11.....	3.1	3.2	4.2	4.3	4.3	5.8	6.5	4.3	5.7	3.1	2.7	2.8
12.....	3.1	3.2	4.0	4.3	4.2	5.5	6.1	4.2	5.4	3.1	2.8	2.8
13.....	3.1	3.2	4.0	4.3	4.1	5.5	6.0	4.2	5.0	3.1	3.0	3.0
14.....	3.1	3.2	3.9	4.3	4.1	5.2	6.0	4.2	4.9	3.1	3.0	3.1
15.....	3.3	3.2	3.9	4.2	4.0	5.1	6.1	4.2	4.8	3.0	3.0	3.1
16.....	3.3	3.2	3.8	4.2	4.0	5.0	6.4	4.2	4.8	3.0	3.0	3.1
17.....	3.3	3.2	3.8	4.3	4.0	4.9	6.3	4.0	4.6	3.0	3.0	3.0
18.....	3.2	3.2	4.0	4.3	4.0	4.5	6.1	4.0	4.5	3.0	2.9	3.0
19.....	3.1	3.3	4.1	4.3	5.0	4.6	6.0	3.9	4.5	3.0	2.9	3.0
20.....	3.1	3.3	4.1	4.3	5.8	4.6	6.0	3.9	4.4	2.9	2.8	3.0
21.....	3.1	3.3	4.1	4.2	5.7	4.6	6.2	3.9	4.3	2.9	2.8	3.0
22.....	3.1	3.3	4.1	4.2	5.7	4.7	6.4	3.9	4.3	2.9	2.8	3.0
23.....	3.1	3.3	4.1	4.3	5.6	4.7	6.3	3.9	4.2	2.8	2.8	2.9
24.....	3.1	3.3	4.1	4.8	5.6	5.9	5.9	3.9	4.2	2.8	2.8	2.9
25.....	3.1	3.3	4.5	5.3	5.5	6.1	5.7	3.9	4.1	2.8	3.0	2.9
26.....	3.1	3.3	4.5	5.8	5.4	6.7	5.45	3.9	4.0	2.7	2.9	2.9
27.....	3.1	3.3	4.4	5.7	5.3	7.2	5.3	3.8	4.0	2.7	2.9	2.9
28.....	3.2	3.3	4.5	5.6	5.3	7.4	5.3	4.0	4.1	2.7	2.8	2.9
29.....	3.2	3.4	4.5	5.4	-----	7.0	5.2	6.65	3.9	2.7	2.8	2.9
30.....	3.2	3.4	4.3	5.4	-----	7.2	5.2	-----	3.8	2.7	2.8	2.9
31.....	3.2	-----	4.3	5.3	-----	7.75	-----	13.0	-----	2.7	2.8	-----
1906-7.												
1.....	2.9	3.2	3.9	5.9	6.7	6.6	5.8	5.0	4.0	3.3	2.8	3.0
2.....	2.9	3.2	3.9	5.4	6.0	6.5	6.1	5.0	3.9	3.3	2.8	3.0
3.....	3.0	3.2	3.9	5.55	5.8	6.3	6.1	5.4	3.8	3.3	2.8	3.0
4.....	3.0	3.1	3.9	6.15	6.0	6.0	6.1	5.4	3.8	3.3	2.8	3.0
5.....	3.0	3.2	3.9	6.0	7.6	5.9	6.1	5.4	3.8	3.3	2.7	3.1
6.....	3.0	3.2	4.0	5.5	9.5	5.9	6.0	5.4	3.7	3.3	2.7	3.2
7.....	3.0	3.2	4.3	5.5	7.95	5.8	7.2	5.4	3.7	3.3	2.7	3.3
8.....	3.0	3.3	4.6	5.4	7.8	5.7	7.8	5.4	3.6	3.3	2.7	3.3
9.....	3.0	3.5	4.8	5.2	7.6	5.7	8.15	5.3	3.6	3.3	2.7	3.2
10.....	3.0	3.5	4.8	5.0	7.4	5.7	8.3	5.2	3.6	3.2	2.7	3.2
11.....	3.0	3.5	4.8	5.0	6.9	5.7	7.7	5.1	3.7	3.1	2.9	3.1
12.....	3.0	3.5	4.7	4.8	6.7	5.6	7.4	5.0	3.8	3.1	2.9	3.1
13.....	3.0	3.5	4.6	4.8	6.3	5.6	7.3	4.9	3.8	3.0	2.9	3.2
14.....	3.0	5.2	4.5	4.6	6.4	5.5	7.2	4.9	3.8	3.0	3.0	3.3
15.....	3.0	5.9	4.5	4.5	6.3	5.4	7.0	4.9	3.7	3.0	3.0	3.3
16.....	3.5	5.7	4.5	4.4	6.3	5.4	6.9	4.9	3.7	3.0	3.0	3.3
17.....	3.5	5.0	4.4	4.4	6.2	5.3	6.6	4.9	3.6	3.0	3.0	3.3
18.....	3.5	4.9	4.4	4.3	6.1	5.6	6.4	4.9	3.6	3.0	2.9	3.3
19.....	3.5	4.5	4.5	4.3	6.9	6.3	6.4	4.9	3.5	3.0	2.9	3.3
20.....	3.5	4.5	6.8	4.4	6.8	6.95	6.3	4.9	3.4	3.0	2.9	3.3
21.....	3.5	4.5	9.0	4.3	6.9	7.8	6.3	4.7	3.4	2.9	2.9	3.3
22.....	3.5	4.4	7.8	4.3	6.7	7.55	6.3	4.6	3.4	2.9	2.9	3.3
23.....	3.6	4.3	7.0	4.3	6.9	7.1	6.4	4.5	3.4	2.9	2.9	3.2
24.....	3.6	4.3	6.5	4.4	6.9	6.7	6.5	4.4	3.3	2.9	2.9	3.2
25.....	3.6	4.2	6.5	4.4	7.2	6.5	6.2	4.3	3.3	2.9	2.9	3.2
26.....	3.6	4.0	7.0	4.4	7.3	6.3	6.0	4.3	3.3	2.9	2.9	3.2
27.....	3.6	4.0	7.1	4.4	7.1	6.1	5.8	4.2	3.3	2.9	3.1	3.2
28.....	3.5	4.0	6.5	4.3	6.9	5.8	5.6	4.1	3.3	2.9	3.1	3.2
29.....	3.4	4.0	6.4	4.0	-----	5.7	5.5	4.1	3.3	2.9	3.0	3.2
30.....	3.3	4.0	6.4	4.0	-----	5.5	5.4	4.0	3.3	2.8	3.0	3.2
31.....	3.3	-----	6.4	6.3	-----	5.5	-----	4.0	-----	2.8	3.0	-----

Daily gage height, in feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	3.2	3.4	3.7	4.50	4.10	5.60	5.40	5.15	4.00	3.08	2.60	2.68
2.....	3.2	3.4	3.7	4.50	4.00	5.30	5.42	5.45	4.00	3.00	2.58	2.62
3.....	3.2	3.3	3.8	4.50	4.00	5.10	5.62	5.35	3.98	2.92	2.55	2.62
4.....	3.3	3.3	3.6	4.40	4.00	5.00	5.90	4.95	3.95	2.92	2.52	2.60
5.....	3.3	3.2	3.6	4.40	3.80	4.10	5.90	4.82	3.88	2.92	2.50	2.60
6.....	3.3	3.2	3.6	4.20	3.80	4.80	5.80	4.78	3.85	2.90	2.50	2.60
7.....	3.3	3.2	3.6	4.30	3.80	4.80	5.65	4.78	3.82	2.90	2.50	2.60
8.....	3.3	3.3	3.8	4.30	3.90	4.60	5.50	4.72	3.75	2.88	2.50	2.60
9.....	3.3	3.3	3.7	4.30	3.90	4.60	5.62	4.60	3.70	2.80	2.50	2.55
10.....	3.3	3.3	3.6	4.30	4.00	4.50	5.98	4.48	3.70	2.80	2.45	2.60
11.....	3.3	3.2	3.6	4.20	4.10	4.60	6.35	4.40	3.70	2.80	2.45	2.60
12.....	3.4	3.3	3.6	4.20	4.20	4.80	6.78	4.35	3.62	2.75	2.45	2.60
13.....	3.4	3.2	3.7	4.30	4.20	5.30	6.98	4.28	3.60	2.72	2.55	2.60
14.....	3.4	3.2	3.7	4.30	4.20	6.50	7.00	4.20	3.60	2.72	2.60	2.55
15.....	3.3	3.2	3.8	4.20	4.20	10.00	6.80	4.20	3.52	2.80	2.78	2.58
16.....	3.3	3.3	3.9	4.20	4.30	.....	6.70	4.28	3.42	2.82	2.70	2.68
17.....	3.4	3.3	3.8	4.10	4.50	9.00	6.58	4.32	3.40	2.85	2.75	2.75
18.....	3.4	3.2	3.8	4.10	4.90	7.80	6.48	4.38	3.40	2.85	2.65	2.85
19.....	3.4	3.2	3.8	4.10	5.00	7.14	6.55	4.42	3.40	2.85	2.60	2.90
20.....	3.4	3.4	3.8	4.10	5.00	6.68	6.90	4.40	3.40	2.80	2.60	2.90
21.....	3.3	3.4	3.8	4.20	4.80	6.28	6.68	4.38	3.45	2.80	2.58	2.82
22.....	3.3	3.4	3.95	4.20	4.70	5.95	6.45	4.38	3.45	2.75	2.55	2.78
23.....	3.3	3.5	5.35	4.30	4.60	5.80	6.18	4.40	3.40	2.80	2.55	2.75
24.....	3.3	3.5	6.8	4.20	4.60	5.90	5.90	4.32	3.38	2.75	2.52	2.75
25.....	3.4	3.6	6.5	4.20	4.80	6.05	5.75	4.30	3.30	2.70	2.55	2.85
26.....	3.4	4.1	7.4	4.10	5.00	6.02	5.55	4.30	3.30	2.70	2.55	2.80
27.....	3.3	4.1	6.5	4.00	5.50	5.85	5.42	4.22	3.22	2.70	2.58	2.88
28.....	3.3	4.0	5.8	4.00	5.80	5.60	5.32	4.18	3.20	2.70	2.65	2.88
29.....	3.4	3.8	5.3	4.00	5.70	5.40	5.18	4.15	3.20	2.70	2.65	2.88
30.....	3.4	3.7	4.9	4.00	.....	5.35	5.12	4.12	3.15	2.68	2.65	2.82
31.....	3.4	.....	4.8	4.00	.....	5.40	.....	4.08	.....	2.65	2.65	.....
1908-9.												
1.....	2.90	3.48	3.40	3.45	.....	5.20	5.55	5.60	4.70	3.20	3.00	2.70
2.....	2.85	3.50	3.40	3.45	.....	5.55	5.72	5.52	4.70	3.18	2.95	2.70
3.....	2.90	3.48	3.40	3.45	.....	5.50	5.75	5.58	4.58	3.12	2.88	2.72
4.....	2.92	3.45	3.40	3.45	.....	5.78	5.65	5.75	4.48	3.08	2.85	2.85
5.....	2.90	3.40	3.35	3.52	.....	6.00	5.42	5.68	4.38	3.00	2.85	2.80
6.....	2.90	3.35	3.35	3.60	.....	5.80	5.28	5.40	4.30	3.00	2.78	2.80
7.....	2.90	3.35	3.35	3.65	.....	5.60	5.08	5.22	4.22	3.00	2.80	2.82
8.....	2.90	3.35	3.35	3.70	.....	5.40	5.00	5.08	4.18	3.00	2.80	2.72
9.....	2.90	3.35	3.35	4.68	.....	5.40	5.08	5.00	4.10	3.00	2.75	2.72
10.....	2.90	3.30	3.35	5.90	.....	5.40	5.32	4.95	4.02	3.00	2.70	2.75
11.....	2.88	3.28	3.35	5.90	.....	5.30	5.48	4.90	3.98	3.00	2.72	2.80
12.....	2.90	3.25	3.40	5.90	.....	5.18	5.38	4.88	3.88	3.00	2.70	2.88
13.....	3.00	3.25	3.40	5.90	.....	5.10	5.45	4.85	3.80	3.00	2.70	2.85
14.....	3.10	3.22	3.50	5.90	.....	5.20	5.60	4.88	3.78	2.95	2.68	2.85
15.....	3.10	3.25	3.50	5.90	.....	5.38	5.75	4.95	3.70	2.95	2.60	2.80
16.....	3.20	3.25	3.52	5.90	.....	5.58	5.75	4.98	3.70	2.90	2.65	2.80
17.....	3.20	3.20	3.50	8.65	.....	5.80	5.78	5.00	3.65	2.90	2.70	2.75
18.....	3.20	3.25	3.50	9.70	.....	5.82	5.65	4.90	3.62	2.95	2.65	2.75
19.....	3.20	3.25	3.50	7.33	.....	5.55	5.50	4.85	3.60	2.85	2.65	2.80
20.....	3.20	3.30	3.50	7.10	.....	5.35	5.45	4.80	3.62	2.85	2.65	2.80
21.....	3.55	3.30	3.50	6.78	.....	5.18	5.35	4.75	3.60	2.80	2.62	2.85
22.....	3.50	3.32	3.50	6.52	5.00	5.02	5.18	4.70	3.52	2.80	2.60	2.90
23.....	3.45	3.35	3.50	5.98	4.88	4.92	5.15	4.65	3.48	2.75	2.60	2.92
24.....	3.40	3.40	3.48	5.42	4.65	5.02	5.10	4.50	3.42	2.72	2.65	2.92
25.....	3.40	3.42	3.40	5.10	4.62	5.18	5.00	4.42	3.40	2.75	2.70	2.80
26.....	3.38	3.45	3.40	4.85	4.70	5.38	5.28	4.40	3.40	2.75	2.70	2.80
27.....	3.35	3.45	3.40	4.65	4.78	5.60	5.70	4.48	3.35	2.85	2.70	2.90
28.....	3.35	3.45	3.35	4.48	4.88	5.65	6.28	4.72	3.35	2.92	2.70	2.85
29.....	3.35	3.42	3.40	4.38	.....	5.55	6.02	4.88	3.28	3.18	2.68	2.88
30.....	3.35	3.45	3.40	.....	.....	5.58	5.75	4.85	3.25	3.12	2.68	2.90
31.....	3.38	.....	3.40	.....	.....	5.52	.....	4.72	.....	3.02	2.65	.....

Daily gage height, in feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	3.02	3.15	5.55	3.98	5.55	7.60	6.05	4.80	3.68	3.12	2.90	3.00
2.....	2.95	3.15	.....	3.92	5.30	9.20	6.15	4.68	3.65	3.10	2.85	3.00
3.....	3.00	3.28	5.18	3.90	5.20	9.20	6.12	4.60	3.62	3.10	2.90	3.02
4.....	2.90	3.30	5.05	3.90	5.22	8.80	5.92	4.72	3.60	3.10	2.75	3.00
5.....	2.92	3.30	5.02	3.90	5.10	8.80	5.82	4.78	3.58	3.10	2.82	3.00
6.....	2.95	3.30	4.82	3.90	4.92	8.05	6.15	4.78	3.50	3.05	2.85	3.00
7.....	2.90	3.30	4.70	.....	4.82	7.45	6.48	4.70	3.50	3.05	2.85	3.00
8.....	2.90	3.30	4.58	3.90	4.75	7.10	6.40	4.68	3.48	3.08	2.85	3.00
9.....	2.95	3.25	4.55	3.90	4.70	7.02	6.78	4.65	3.48	3.02	2.85	3.00
10.....	2.92	3.25	4.85	3.90	4.62	7.22	7.05	4.70	3.42	3.00	2.85	3.00
11.....	2.95	3.25	4.85	.....	4.60	7.30	7.22	5.15	3.38	3.00	2.85	3.00
12.....	3.02	3.25	5.50	.....	4.50	7.55	7.22	5.15	3.28	3.00	2.85	3.00
13.....	2.95	.....	6.32	.....	4.52	7.75	7.05	5.05	3.25	3.00	2.85	3.00
14.....	2.90	3.40	6.20	.....	4.65	8.02	6.70	4.92	3.25	3.00	2.90	3.05
15.....	2.88	.....	5.75	3.90	4.90	8.08	6.35	4.78	3.22	2.95	2.90	3.05
16.....	2.95	3.40	5.45	3.80	4.82	8.00	6.15	4.68	3.25	2.95	2.90	3.05
17.....	2.92	3.40	5.18	3.80	4.80	8.12	6.02	4.58	3.35	2.92	2.90	3.10
18.....	3.05	3.40	4.98	4.10	4.70	8.18	6.02	4.48	3.38	2.90	2.90	3.10
19.....	3.05	3.52	4.78	5.30	4.68	8.15	6.22	4.38	3.35	2.90	2.90	3.10
20.....	3.05	3.25	4.68	4.08	4.60	8.10	6.38	4.30	3.35	2.90	2.90	3.15
21.....	3.00	4.72	4.52	4.28	4.60	8.85	6.18	4.20	3.35	2.90	2.90	3.10
22.....	3.00	5.10	4.45	5.25	4.55	8.20	5.95	4.12	3.32	2.90	2.90	3.12
23.....	3.05	7.30	4.30	5.50	4.50	8.75	5.78	4.08	3.28	2.90	2.90	3.15
24.....	3.00	7.40	4.20	7.05	5.00	8.20	5.80	4.00	3.25	2.90	2.90	3.18
25.....	3.00	6.65	4.20	7.02	6.55	7.55	5.80	3.98	3.22	2.90	2.90	3.15
26.....	3.00	5.98	4.10	6.60	6.22	7.10	5.70	3.95	3.20	2.90	2.90	3.12
27.....	3.00	5.70	4.10	5.82	6.22	6.75	5.45	3.95	3.20	2.90	2.90	3.15
28.....	3.05	5.25	4.0	5.70	6.90	6.45	5.25	3.95	3.18	2.90	2.92	3.12
29.....	3.00	5.12	3.90	5.60	.....	6.25	5.05	3.90	3.15	2.90	2.92	3.10
30.....	3.05	5.28	3.95	5.42	.....	6.00	4.90	3.82	3.12	2.90	2.95	3.10
31.....	3.15	.....	4.05	5.40	.....	5.92	.....	3.78	.....	2.90	3.00	.....

NOTE.—Ice present Jan. 10-14, 1907; Jan. 10-19, 1909; and Jan. 3-17, 1910. Gage heights Jan. 30 to Feb. 21, 1909, are believed to be in error and are not published.

Daily discharge, in second-feet, of Umatilla River at Yoakum, Oreg., for 1903-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....	.....	324	105	52	.....	16.....	686	308	62	.....	186
2.....	.....	324	105	52	.....	17.....	610	164	62	.....	164
3.....	.....	324	88	52	.....	18.....	545	164	62	.....	164
4.....	.....	293	88	52	.....	19.....	486	164	62	.....	143
5.....	1,400	293	105	52	57	20.....	434	143	62	.....	143
6.....	1,400	264	88	52	62	21.....	394	143	62	.....	123
7.....	1,310	237	88	52	62	22.....	394	123	62	.....	123
8.....	1,220	211	88	52	73	23.....	357	123	62	.....	105
9.....	1,040	186	88	42	73	24.....	357	123	62	.....	105
10.....	1,040	186	88	42	73	25.....	324	123	62	.....	88
11.....	860	186	88	42	88	26.....	324	105	62	.....	105
12.....	860	186	73	42	105	27.....	324	105	62	.....	105
13.....	860	186	73	35	143	28.....	357	105	62	.....	105
14.....	860	164	62	35	264	29.....	357	105	52	.....	88
15.....	770	211	62	35	211	30.....	357	105	52	.....	88
						31.....	324	.....	52	.....	.....

Daily discharge, in second-feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	88	123	1,400	567	628	1,860	3,670	2,170	510	78	41	41
2.....	88	123	1,580	510	628	1,760	3,790	2,500	510	78	41	41
3.....	73	123	1,310	510	567	1,660	4,460	2,500	510	78	30	41
4.....	105	123	1,130	510	510	1,660	4,240	2,500	510	272	30	41
5.....	123	123	950	510	457	1,660	3,910	2,390	510	235	30	53
6.....	143	123	686	510	457	1,860	5,270	2,280	567	201	30	53
7.....	237	123	486	510	510	3,090	4,090	2,170	510	201	30	53
8.....	237	164	434	567	628	6,870	3,960	1,660	510	170	30	53
9.....	237	186	394	567	628	5,740	4,870	1,660	457	170	30	53
10.....	237	211	357	628	628	5,280	6,120	1,860	406	170	30	53
11.....	211	264	357	899	691	4,550	7,080	1,860	358	141	30	53
12.....	211	324	357	1,050	691	2,970	6,950	1,760	358	170	30	53
13.....	211	357	357	1,480	691	2,280	7,670	1,660	358	141	30	53
14.....	211	434	324	1,570	691	2,170	7,530	1,480	313	141	30	53
15.....	211	950	324	1,960	758	2,390	6,970	1,390	272	141	30	53
16.....	186	610	486	1,860	1,860	2,280	5,900	1,300	272	141	30	53
17.....	164	486	1,490	1,860	1,960	2,170	5,060	1,300	201	141	30	53
18.....	143	434	1,220	1,760	1,760	2,280	4,620	1,390	170	116	30	53
19.....	143	394	1,040	1,570	1,570	2,280	5,020	1,390	141	116	30	53
20.....	164	686	1,130	1,480	1,390	2,280	5,310	1,300	141	116	30	53
21.....	164	1,580	1,490	1,300	1,480	2,170	4,720	1,300	141	95	30	65
22.....	164	2,570	1,580	1,130	2,060	2,060	4,200	1,300	116	95	41	65
23.....	164	2,120	1,580	973	2,280	2,060	3,330	1,130	116	78	41	116
24.....	143	2,030	1,490	1,210	2,390	2,060	2,760	1,050	116	65	41	95
25.....	143	1,670	1,310	1,300	2,280	1,960	2,300	899	116	65	41	78
26.....	143	1,490	1,310	1,210	2,280	1,570	3,260	758	116	65	41	65
27.....	123	1,490	1,130	1,050	2,170	1,570	3,480	691	95	53	41	65
28.....	123	1,400	860	973	2,060	1,760	3,090	691	78	53	41	65
29.....	123	1,310	610	899	1,960	3,860	2,620	628	78	53	41	65
30.....	123	1,220	486	758	.....	4,840	2,500	567	78	41	41	65
31.....	123	.....	434	758	.....	3,600	.....	567	.....	41	41	.....
1904-5.												
1.....	65	95	95	315	450	565	1,360	505	355	110	20	28
2.....	65	95	95	315	400	630	1,940	450	355	73	20	28
3.....	65	95	95	275	355	630	1,840	505	355	73	20	28
4.....	65	95	95	275	315	630	1,840	700	355	73	20	28
5.....	65	95	95	275	315	630	1,840	925	355	73	20	28
6.....	65	95	95	275	275	630	1,840	925	355	59	20	28
7.....	65	95	95	275	275	630	1,840	925	355	59	20	28
8.....	65	95	95	240	240	565	1,840	845	275	59	20	28
9.....	65	95	95	210	240	505	1,550	1,090	275	59	20	32
10.....	65	95	95	210	210	505	1,460	1,090	275	59	20	32
11.....	95	95	95	210	182	505	1,270	1,090	240	59	20	32
12.....	78	95	95	210	156	505	1,090	1,180	210	59	20	76
13.....	78	95	95	182	156	505	1,090	1,090	210	59	20	156
14.....	95	95	95	156	156	505	925	925	182	59	20	37
15.....	116	95	95	156	156	505	845	845	156	59	20	47
16.....	116	95	95	156	156	505	845	700	132	59	20	47
17.....	141	95	95	156	156	505	770	700	132	59	28	47
18.....	116	95	116	156	156	505	845	630	132	47	28	47
19.....	116	95	116	156	275	505	925	565	110	47	28	47
20.....	116	95	141	182	210	505	925	505	90	47	28	47
21.....	116	95	141	182	182	565	925	505	90	47	28	47
22.....	116	95	141	210	156	700	925	450	90	47	28	47
23.....	95	95	141	240	182	770	925	450	315	37	28	47
24.....	95	95	141	450	315	1,270	925	505	182	37	28	47
25.....	95	95	141	770	450	1,360	925	505	156	28	28	47
26.....	95	95	141	770	505	1,740	845	505	132	28	28	73
27.....	95	95	141	700	505	2,040	630	450	132	28	28	90
28.....	95	95	141	700	505	1,840	630	450	132	20	28	59
29.....	95	95	170	565	.....	1,640	565	400	132	20	28	59
30.....	95	95	235	505	.....	1,360	505	400	90	20	28	59
31.....	95	95	272	450	.....	1,360	.....	355	.....	20	28	.....

Daily discharge, in second-feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	59	110	132	410	1,040	1,040	4,340	820	7,080	199	28	37
2.....	59	110	156	410	890	1,040	3,090	820	4,250	173	28	37
3.....	59	110	182	320	820	965	2,750	755	3,310	149	28	37
4.....	59	110	355	320	690	965	2,880	755	3,310	149	28	37
5.....	59	110	355	320	570	890	3,020	630	3,160	127	28	37
6.....	73	110	355	360	515	820	3,020	630	3,020	107	28	37
7.....	90	110	355	570	515	755	3,020	515	2,620	107	28	37
8.....	90	110	450	570	460	890	3,020	460	2,380	89	28	37
9.....	90	110	450	298	460	1,200	3,160	460	2,150	73	28	37
10.....	73	90	450	360	410	1,370	2,500	410	1,840	73	28	37
11.....	73	90	400	410	410	1,460	2,150	410	1,370	73	28	37
12.....	73	90	315	410	360	1,200	1,740	360	1,120	73	37	37
13.....	73	90	315	410	320	1,200	1,640	360	820	73	59	59
14.....	73	90	275	410	320	965	1,040	360	755	73	59	73
15.....	110	90	275	360	284	890	1,740	360	690	59	59	73
16.....	110	90	240	360	284	820	2,040	360	690	59	59	73
17.....	110	90	240	410	284	755	1,940	284	570	59	59	59
18.....	90	90	315	410	284	515	1,740	284	515	59	47	59
19.....	73	110	355	410	820	570	1,640	253	515	59	47	59
20.....	73	110	355	410	1,460	570	1,640	253	400	47	37	59
21.....	73	110	355	360	1,370	570	1,840	253	410	47	37	59
22.....	73	110	355	360	1,370	630	2,040	253	410	47	37	59
23.....	73	110	355	410	1,280	630	1,940	253	300	37	37	47
24.....	73	110	355	690	1,280	1,550	1,550	253	300	37	37	47
25.....	73	110	565	1,040	1,200	1,740	1,370	253	320	37	59	47
26.....	73	110	565	1,460	1,120	2,380	1,160	253	284	28	47	47
27.....	73	110	505	1,370	1,040	3,020	1,040	225	284	28	47	47
28.....	90	110	565	1,280	1,040	3,310	1,040	284	320	28	37	47
29.....	90	132	565	1,120	.....	2,750	965	2,320	253	28	37	47
30.....	90	132	450	1,120	.....	3,020	965	23,900	225	28	37	47
31.....	90	.....	450	1,040	.....	3,850	.....	17,000	.....	28	37	.....
1906-7.												
1.....	47	89	253	1,650	2,540	2,420	1,550	890	318	110	38	62
2.....	47	89	253	1,180	1,750	2,300	1,850	890	277	110	38	62
3.....	59	89	253	1,320	1,550	2,070	1,850	1,180	242	110	38	62
4.....	59	73	253	1,900	1,750	1,750	1,850	1,180	242	110	38	62
5.....	59	89	253	1,750	3,790	1,650	1,850	1,180	242	110	28	75
6.....	59	89	284	1,270	7,230	1,650	1,750	1,180	208	110	28	90
7.....	59	89	410	1,270	4,320	1,550	3,200	1,180	208	110	28	110
8.....	59	107	570	1,180	4,090	1,450	4,090	1,180	179	110	28	110
9.....	59	149	690	1,030	3,790	1,450	4,640	1,100	179	110	28	90
10.....	59	149	690	890	3,490	1,450	4,900	1,030	179	90	28	90
11.....	59	149	690	890	2,790	1,450	3,940	960	208	75	49	75
12.....	59	149	630	760	2,540	1,360	3,490	890	242	75	49	75
13.....	59	149	570	760	2,070	1,360	3,340	820	242	62	49	90
14.....	59	965	515	640	2,180	1,270	3,200	820	242	62	62	110
15.....	59	1,550	515	580	2,070	1,180	2,920	820	208	62	62	110
16.....	149	1,370	515	520	2,070	1,180	2,790	820	208	62	62	110
17.....	149	820	460	520	1,960	1,100	2,420	820	179	62	62	110
18.....	149	755	400	465	1,850	1,360	2,180	820	179	62	49	110
19.....	149	515	515	465	2,790	2,070	2,180	820	153	62	49	110
20.....	149	515	2,500	520	2,660	2,860	2,070	820	130	62	49	110
21.....	149	515	6,060	465	2,790	4,090	2,070	700	130	49	49	110
22.....	149	460	3,930	465	2,540	3,720	2,070	640	130	49	49	110
23.....	173	410	2,750	465	2,790	3,060	2,180	580	130	49	49	90
24.....	173	410	2,150	520	2,790	2,540	2,300	520	110	49	49	90
25.....	173	360	2,150	520	3,200	2,300	1,960	465	110	49	49	90
26.....	173	284	2,750	520	3,340	2,070	1,750	465	110	49	49	90
27.....	173	284	2,880	520	3,060	1,850	1,550	410	110	49	75	90
28.....	149	284	2,150	465	2,790	1,550	1,360	363	110	49	75	90
29.....	127	284	2,040	318	.....	1,450	1,270	363	110	49	62	90
30.....	107	284	2,040	318	.....	1,270	1,180	318	110	38	62	90
31.....	107	2,040	.....	2,070	.....	1,270	.....	318	.....	38	62	.....

a Estimated; water overflowed bottom lands.

Daily discharge, in second-feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	90	130	208	580	363	1,360	1,180	995	318	72	20	26
2.....	90	130	208	580	318	1,100	1,200	1,220	318	62	19	22
3.....	90	110	242	580	318	960	1,380	1,140	310	59	17	22
4.....	110	110	179	520	318	890	1,650	855	298	52	15	20
5.....	110	90	179	520	242	363	1,650	772	270	52	14	20
6.....	110	90	179	465	242	760	1,550	748	260	49	14	20
7.....	110	90	179	465	242	760	1,400	748	249	49	14	20
8.....	110	110	242	465	277	640	1,270	712	225	47	14	20
9.....	110	110	208	465	277	640	1,380	640	208	38	14	17
10.....	110	110	179	465	318	580	1,730	568	208	38	12	20
11.....	110	90	179	410	363	640	2,120	520	208	38	12	20
12.....	130	110	179	410	410	760	2,640	492	185	33	12	20
13.....	130	90	208	465	410	1,100	2,890	454	179	30	17	20
14.....	130	90	208	465	410	2,300	2,920	410	179	30	20	17
15.....	110	90	242	410	410	8,200	2,660	410	158	38	36	19
16.....	110	110	277	410	465	16,000	2,540	454	135	40	28	26
17.....	130	110	242	363	580	6,150	2,400	476	130	44	33	34
18.....	130	90	242	363	820	4,100	2,280	509	130	44	24	44
19.....	130	90	242	363	890	3,120	2,300	532	130	44	20	49
20.....	130	130	242	363	890	2,520	2,790	520	130	38	20	49
21.....	110	130	242	410	760	2,050	2,520	509	142	38	19	40
22.....	110	130	298	410	700	1,700	2,240	509	142	33	17	36
23.....	110	153	1,140	465	640	1,450	1,940	520	130	38	17	33
24.....	110	153	2,660	410	640	1,650	1,650	476	126	33	15	33
25.....	130	179	2,300	410	760	1,800	1,500	465	110	28	17	44
26.....	130	363	3,490	363	890	1,770	1,320	465	110	28	17	38
27.....	110	363	2,300	318	1,270	1,600	1,200	421	94	28	19	47
28.....	110	318	1,550	318	1,550	1,360	1,120	401	90	28	24	47
29.....	130	242	1,100	318	1,450	1,180	1,020	386	90	28	24	47
30.....	130	208	820	318	-----	1,140	974	372	82	26	24	40
31.....	130	-----	760	318	-----	1,180	-----	354	-----	24	24	-----
1908-9.												
1.....	49	148	130	142	410	1,030	1,320	1,360	700	90	62	28
2.....	44	153	130	142	363	1,320	1,470	1,290	700	87	56	28
3.....	49	148	130	142	363	1,270	1,500	1,340	628	78	47	30
4.....	52	142	130	142	363	1,530	1,400	1,500	568	72	44	44
5.....	49	130	120	158	363	1,750	1,200	1,430	509	62	44	38
6.....	49	120	120	179	363	1,550	1,090	1,180	465	62	36	38
7.....	49	120	120	194	318	1,360	946	1,040	421	62	38	40
8.....	49	120	120	208	318	1,180	890	946	401	62	38	30
9.....	49	120	120	688	318	1,180	946	890	363	62	33	30
10.....	49	110	120	990	318	1,180	1,120	855	327	62	28	33
11.....	47	106	120	990	298	1,100	1,250	820	300	62	30	38
12.....	49	100	130	990	298	1,020	1,160	810	270	62	28	47
13.....	62	100	130	990	260	960	1,220	790	242	62	28	44
14.....	75	94	153	990	260	1,030	1,360	810	235	56	26	44
15.....	75	100	153	990	298	1,160	1,500	855	208	56	20	38
16.....	90	100	158	990	390	1,340	1,500	890	208	49	24	38
17.....	90	90	153	1,510	2,920	1,550	1,530	890	194	49	23	33
18.....	90	100	153	2,020	2,180	1,570	1,400	820	185	56	24	33
19.....	90	100	153	2,540	1,700	1,320	1,270	790	179	44	24	38
20.....	90	110	153	3,060	1,400	1,140	1,220	760	185	44	24	38
21.....	166	110	153	2,640	1,030	1,020	1,140	730	179	38	22	43
22.....	153	114	153	2,320	890	904	1,020	700	158	38	20	49
23.....	142	120	153	1,730	808	834	995	670	148	33	20	51
24.....	130	130	148	1,200	670	904	960	580	134	30	24	51
25.....	130	135	130	960	652	1,020	890	532	130	33	28	38
26.....	126	142	130	790	700	1,160	1,090	520	130	33	28	38
27.....	120	142	130	670	748	1,360	1,450	568	120	44	28	49
28.....	120	142	120	568	808	1,400	2,050	712	120	52	28	44
29.....	120	135	130	509	-----	1,320	1,770	808	106	87	26	47
30.....	120	142	130	454	-----	1,340	1,500	790	100	78	26	49
31.....	126	-----	130	410	-----	1,290	-----	712	-----	65	24	-----

Daily discharge, in second-feet, of Umatilla River at Yoakum, Oreg., for 1903-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	65	82	1,320	253	1,220	3,580	1,420	562	130	38	20	27
2.....	56	82	1,170	232	1,020	6,260	1,500	502	124	36	17	27
3.....	62	106	1,020	202	940	5,790	1,480	462	117	36	20	29
4.....	49	110	925	202	956	5,100	1,310	522	112	36	12	27
5.....	52	110	904	202	870	5,100	1,230	552	108	36	15	27
6.....	56	110	772	202	744	3,860	1,500	552	92	32	17	27
7.....	49	110	700	202	678	2,990	1,820	512	92	32	17	27
8.....	49	110	628	202	635	2,530	1,740	502	89	34	17	27
9.....	56	100	610	202	605	2,430	2,150	487	89	29	17	27
10.....	52	100	790	202	557	2,690	2,470	512	78	27	17	27
11.....	56	100	790	180	545	2,790	2,690	760	72	27	17	27
12.....	65	100	1,270	180	490	3,130	2,690	760	57	27	17	27
13.....	56	115	2,090	180	501	3,410	2,470	700	54	27	17	27
14.....	49	130	1,960	180	575	3,810	2,060	625	54	27	20	32
15.....	47	130	1,500	180	730	3,900	1,690	552	50	24	20	32
16.....	56	130	1,220	156	678	3,780	1,500	502	54	24	20	32
17.....	52	130	1,020	156	665	3,960	1,390	452	68	21	20	36
18.....	68	130	876	300	605	4,060	1,390	405	72	20	20	36
19.....	68	158	748	1,020	593	4,010	1,570	359	68	20	20	36
20.....	68	235	688	292	545	5,610	1,720	325	68	20	20	42
21.....	62	712	692	381	545	5,180	1,530	285	68	20	20	36
22.....	62	960	550	980	518	4,090	1,330	255	63	20	20	38
23.....	68	3,340	465	1,180	490	5,020	1,190	241	57	20	20	42
24.....	62	3,490	410	2,800	800	4,090	1,210	215	54	20	20	45
25.....	62	2,480	410	2,760	2,180	3,130	1,210	209	50	20	20	42
26.....	62	1,730	363	2,240	1,830	2,530	1,130	200	47	20	20	38
27.....	62	1,450	363	1,450	1,830	2,120	945	200	47	20	20	42
28.....	68	1,060	318	1,340	2,600	1,790	820	200	45	20	21	38
29.....	62	974	293	1,260	-----	1,600	700	185	42	20	21	36
30.....	68	1,090	277	1,120	-----	1,370	614	164	38	20	24	36
31.....	82	-----	340	1,100	-----	1,310	-----	154	-----	20	27	-----

NOTE.—Daily discharge determined as follows:

1903. From fairly well defined rating curve.

1904. From fairly well defined curve; Apr. 1-27, estimated as the sum of discharge of Umatilla River at Pendleton, McKay Creek, and Birch Creek, the discharge of which was estimated as one-half that of McKay Creek; Aug. 16 to Sept. 4, estimated at 42 second-feet.

1905. From fairly well defined rating curve.

1906. From curve well defined below 8,000 second-feet.

1907 to 1909. From curve well defined between 100 and 8,000 second-feet. Discharge Mar. 16, 1908, estimated from records at Umatilla. Discharge Jan. 10-16, 1909, determined from open-channel curve reduced 40 per cent; Jan. 17-19, interpolated on account of ice; Jan. 30 to Feb. 21, determined from corrected gage heights based on a relation curve between this station and that at Gibbon; approximate. (See footnote to gage heights.)

1910. From two fairly well-defined rating curves applicable Jan. 1 to Mar. 2 and Mar. 3 to Sept. 30. Discharge determined from open-channel rating curves Jan. 3-10 reduced 10 per cent, and Jan. 11-17, 20 per cent to counterbalance effect of ice.

Monthly discharge of Umatilla River at Yoakum, Oreg., for 1903-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
May 5-31.....	1,400	324	676	36,200	B.
June.....	324	105	189	11,200	B.
July.....	105	52	73	4,490	B.
August.....	-----	-----	^a 44	2,700	B.
September.....	264	-----	^a 107	6,370	B.
The period.....	-----	-----	-----	61,000	-----

^a Estimated.

Monthly discharge of Umatilla River at Yoakum, Oreg., for 1903-1910—Continued.

Month	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October.....	237	73	160	9,840	B.
November.....	2,570	123	775	46,100	B.
December.....	1,580	324	906	55,700	B.
January.....	1,960	510	1,050	64,300	B.
February.....	2,390	457	1,260	72,700	B.
March.....	6,870	1,570	2,730	168,000	B.
April.....	7,670	2,500	4,650	277,000	C.
May.....	2,500	567	1,490	91,400	B.
June.....	567	78	288	17,100	B.
July.....	272	41	120	7,380	B.
August.....	41	30	34.3	2,110	C.
September.....	116	41	58.5	3,480	B.
The year.....	7,670	30	1,090	786,000	
1904-5.					
October.....	141	65	90.5	5,560	D.
November.....	95	95	95.0	5,650	B.
December.....	272	95	122	7,500	B.
January.....	770	156	320	19,700	B.
February.....	505	156	273	15,200	B.
March.....	2,040	505	826	50,800	C.
April.....	1,940	505	1,150	68,600	C.
May.....	1,180	355	683	42,000	B.
June.....	355	90	212	12,600	C.
July.....	110	20	51.1	3,140	B.
August.....	28	20	23.9	1,470	B.
September.....	156	28	48.2	2,870	B.
The year.....	2,040	20	325	235,000	
1905-6.					
October.....	110	59	78.7	4,840	B.
November.....	132	90	105	6,250	B.
December.....	565	132	368	22,600	B.
January.....	1,460	298	587	36,100	B.
February.....	1,460	284	697	38,700	B.
March.....	3,850	515	1,370	84,200	A.
April.....	4,340	965	2,090	124,000	A.
May.....	^a 23,900	225	1,770	109,000	B.
June.....	7,080	225	1,460	86,900	A.
July.....	199	28	72.7	4,470	B.
August.....	59	28	39.4	2,420	B.
September.....	73	37	48.4	2,880	B.
The year.....	^a 23,900	28	724	522,000	
1906-7.					
October.....	173	47	105	6,460	B.
November.....	1,550	73	384	22,800	B.
December.....	6,060	253	1,360	83,600	A.
January.....	2,070	318	845	52,000	A.
February.....	7,230	1,550	2,880	160,000	A.
March.....	4,090	1,100	1,870	115,000	A.
April.....	4,900	1,180	2,460	146,000	A.
May.....	1,180	318	792	48,700	A.
June.....	318	110	173	10,300	A.
July.....	110	38	72.4	4,450	B.
August.....	75	28	48.1	2,960	B.
September.....	110	62	92.1	5,480	B.
The year.....	7,230	28	924	658,000	
1907-8.					
October.....	130	90	116	7,130	B.
November.....	363	90	144	8,570	B.
December.....	3,480	179	675	41,500	A.
January.....	580	318	425	26,100	A.
February.....	1,550	242	594	34,200	A.
March.....	16,000	363	2,260	139,000	B.
April.....	2,920	974	1,850	110,000	A.
May.....	1,220	354	582	35,800	A.
June.....	318	82	178	10,600	A.
July.....	72	24	39.6	2,430	B.
August.....	36	12	19.1	1,170	B.
September.....	49	17	30.3	1,800	B.
The year.....	16,000	12	576	418,000	

^a Estimated; water overflowed bottom lands.

Monthly discharge of Umatilla River at Yoakum, Oreg., for 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-9.					
October.....	166	44	87.1	5,360	B.
November.....	153	90	121	7,200	B.
December.....	158	120	136	8,360	B.
January.....	3,060	142	978	60,100	C.
February.....	2,920	260	710	39,400	C.
March.....	1,750	834	1,230	75,600	A.
April.....	2,050	890	1,270	75,600	A.
May.....	1,500	520	883	54,300	A.
June.....	700	100	287	17,100	A.
July.....	90	30	57.1	3,510	C.
August.....	62	20	30.8	1,890	C.
September.....	52	28	39.7	2,360	C.
The year.....	3,060	20	486	351,000	
1909-10.					
October.....	82	47	59.7	3,670	C.
November.....	3,490	82	657	39,100	A.
December.....	2,090	277	819	50,400	A.
January.....	2,800	156	695	42,700	C.
February.....	2,600	490	891	49,500	B.
March.....	6,260	1,310	3,580	220,000	B.
April.....	2,690	614	1,550	92,200	B.
May.....	760	154	417	25,600	B.
June.....	130	38	72.0	4,280	A.
July.....	38	20	25.6	1,570	A.
August.....	27	12	19.1	1,170	A.
September.....	45	27	33.1	1,970	A.
The year.....	6,260	12	735	532,000	

UMATILLA RIVER NEAR UMATILLA, OREG.

Location.—In sec. 21, T. 5 N., R. 28 E., $1\frac{1}{2}$ miles above Umatilla and mouth of river; near main line of Oregon-Washington Railroad & Navigation Co., one-fourth mile below diversion point of Oregon Land & Water Co.'s canal, and one-fourth mile above headgate of Brownell ditch.

Records presented.—October 21, 1903, to September 30, 1910. Records show practically the total unappropriated flow of river except the amount diverted by the Oregon Land & Water Co.'s ditch. (See p. 276.)

Drainage area.—2,130 square miles.

Gage.—Inclined staff in two sections; lower section 1.2 to 3.5 feet; upper, 3.5 to 10.8 feet.

Channel.—Solid rock without gravel or sand. One channel at all stages.

Discharge measurements.—Made from cable or by wading.

Winter flow.—Occasionally shore or floating ice; discharge relation not materially affected.

Diversions.—Large part of total flow of river diverted for irrigation above station. The Umatilla project feed canal also diverts water during winter for storage in Cold Springs Reservoir. Low-water flow is mostly return water from lands under the Hermiston project and other irrigated tracts.

Accuracy.—Results excellent.

Discharge measurements of Umatilla River near Umatilla, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Fect.</i>	<i>Sec.-fect.</i>	1906.		<i>Fect.</i>	<i>Sec.-ft.</i>
Oct. 21	John H. Lewis.....	2.70	157	Feb. 22	R. S. Hall.....	4.00	1,330
Nov. 29	.....do.....	3.95	1,300	Mar. 17	.....do.....	3.40	652
1904.				Apr. 19	J. C. Stevens.....	4.05	1,440
Mar. 18	John H. Lewis.....	4.40	2,190	May 28	R. S. Hall.....	2.70	169
30	.....do.....	6.30	5,480	31	Stevens and Lewis.....	11.00	b 17,500
Apr. 11	H. A. Yates.....	6.65	6,030	June 11	R. S. Hall.....	4.05	1,360
May 13	Murphy and Sawyer.....	4.00	1,510	23	.....do.....	3.02	414
Aug. 13	W. C. Sawyer.....	1.86	7	Aug. 11	J. C. Stevens.....	1.10	.3
Oct. 24	.....do.....	2.42	62	Nov. 25	H. D. McGlashan.....	3.00	348
1905.				1908.			
Feb. 28	J. H. Lewis.....	3.37	606	Mar. 17	J. C. Stevens.....	8.03	10,500
Mar. 27	.....do.....	4.22	1,720	17	.....do.....	7.66	9,230
Apr. 10	.....do.....	3.95	1,380	17	.....do.....	7.28	7,920
May 12	W. C. Sawyer.....	3.70	1,100	Mar. 18	.....do.....	6.15	5,220
July 19	.....do.....	1.60	a .1	June 6	H. D. McGlashan.....	2.25	45
Sept. 26	.....do.....	1.82	4.0	Oct. 12	L. R. Allen.....	1.57	2.7
Oct. 25	Sawyer and Hall.....	2.41	62	1910.			
Dec. 6	R. S. Hall.....	3.00	304	Sept. 2	R. W. Davenport....	2.26	42.6
20	.....do.....	3.08	363				

a Estimated.

b Measured by floats.

Daily gage height, in feet, of Umatilla River near Umatilla, Oreg., for 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1	2.70	.....	3.30	3.50	4.25	.....	.....	.....	2.15	.....	1.95
2	4.10	3.30	3.40	.....	5.40	4.55	3.20	.....	2.20	.....
3	2.50	.....	3.30	3.40	4.20	5.50	4.40	.....	2.15	.....	2.00
4	3.90	3.30	3.30	.....	5.65	.....	3.30	.....	2.10	.....
5	2.50	.....	3.30	3.30	4.25	5.60	4.30	3.20	3.10	.....	2.00
6	3.60	3.20	3.30	.....	5.50	4.25	.....	.....	2.05	.....
7	2.60	.....	3.20	3.40	4.80	5.90	4.25	3.15	3.00	.....	2.00
8	3.50	3.20	3.40	.....	5.80	4.25	3.10	.....	2.00	.....
9	2.70	.....	3.20	3.40	7.30	.....	4.15	3.10	2.80	.....	2.00
10	3.40	3.30	3.40	.....	6.00	4.05	3.05	.....	2.00	.....
11	2.90	.....	3.50	3.30	5.45	6.60	4.20	3.00	2.70	.....	2.00
12	3.30	3.70	3.30	.....	6.90	4.15	2.85	.....	1.95	.....
13	3.00	.....	3.80	3.30	4.80	7.05	4.00	2.85	3.00	.....	2.00
14	3.20	4.10	3.30	.....	7.40	4.00	2.80	.....	1.90	.....
15	3.00	.....	4.00	3.30	4.75	7.65	3.95	2.80	2.60	.....	2.20
16	3.20	4.20	3.90	.....	7.40	3.95	.....	.....	1.90	.....
17	3.60	.....	4.20	4.40	4.60	6.45	3.90	2.75	2.60	.....	2.20
18	4.10	4.10	.....	.....	.....	3.85	.....	.....	1.90	.....
19	3.50	.....	4.10	4.20	4.40	5.40	3.85	2.70	2.55	.....	2.20
20	3.90	4.00	.....	.....	.....	3.90	.....	.....	1.90	.....
21	3.30	.....	3.90	4.00	4.40	5.80	3.80	2.60	2.50	.....	2.20
22	2.70	4.20	3.80	4.45	.....	4.45	.....	.....	.....	1.90	.....
23	4.70	.....	3.70	4.40	4.40	5.20	3.80	2.50	2.50	.....	2.20
24	2.60	4.10	3.70	4.20	4.35	5.00	3.80	.....	.....	1.90	.....
25	4.50	.....	3.80	4.30	4.35	.....	3.70	2.50	2.50	.....	2.40
26	2.60	3.90	3.80	.....	4.20	4.20	3.60	.....	.....	1.95	.....
27	4.10	3.80	4.20	4.10	4.50	3.45	2.45	2.40	.....	2.35
28	2.60	4.00	3.60	3.70	4.00	4.60	3.35	.....	.....	1.95	.....
29	3.95	3.60	4.20	4.80	.....	3.25	2.30	2.25	.....	2.30
30	2.60	4.00	3.40	3.60	6.45	4.80	3.20	.....	.....	1.95	.....
31	3.50	.....	5.95	.....	3.15	.....	2.20	.....	.....

Daily gage height, in feet, of Umatilla River near Umatilla, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1	2.35			2.8			3.85		3.05	2.3		1.6
2		2.35	2.55		3.15	3.35		3.15			1.6	
3	2.35			2.85			4.2		2.95	2.1		1.6
4		2.35	2.55		3.05	3.4		3.25			1.61	
5	2.3			2.85			4.1		2.9	1.8		1.6
6		2.35	2.55		3.0	3.4	4.2	3.6			1.61	
7	2.15			2.8					2.9	1.7		1.6
8		2.30	2.55		2.9	3.3	4.15	3.6			1.61	
9	2.15			2.8					2.8	1.65		1.6
10		2.35	2.55		2.9	3.2	3.95	3.7			1.6	
11	2.3			2.8					2.7	1.6		1.62
12		2.35	2.55		2.9	3.2	3.7	3.8			1.6	
13	2.35			2.95					2.6	1.55		2.27
14		2.35	2.55		2.75	3.2	3.65	3.7			1.7	
15	2.45			2.95					2.45	1.5		2.35
16	2.45	2.4	2.6		2.8	3.15	3.5	3.45			1.6	
17				2.9					2.3	1.5		2.1
18	2.45	2.35	2.6		2.8	3.2	3.45	3.4			1.6	
19				2.7					2.2	1.6		2.0
20	2.45	2.4	2.6		2.8	3.15	3.4	3.2			1.6	
21				2.7					2.2	1.6		1.89
22	2.45	2.35	2.65		2.8	3.25	3.55	3.1			1.6	
23				2.75					1.9	1.6		1.89
24	2.4	2.4	2.65		2.85	3.5	3.6	3.1			1.6	
25				3.15					2.2	1.59		1.89
26	2.4	2.4	2.65		3.15	3.8	3.5	3.2	2.4		1.6	
27				3.45		4.22			2.35	1.6		1.8
28	2.4	2.5	2.65		3.37	4.3	3.4	3.15			1.6	
29				3.4		4.3			2.3	1.65		1.89
30	2.3	2.5	2.65			4.0	3.2	3.1			1.6	
31	2.3			3.3						1.6		
1905-6.												
1	1.9			2.9			5.4	3.5	8.0	2.65	1.0	1.2
2		2.43	2.68		3.4	3.8			6.3			
3	2.2			2.8			4.9	3.4	5.5	2.5	1.0	1.2
4		2.43	2.7		3.35	3.6						
5	2.18			2.8			4.7	3.3	5.4	2.25	1.0	1.2
6		2.43	3.0		3.3	3.5						
7	2.21			3.0			4.7	3.15	5.0	2.0	1.0	1.2
8		2.41	3.0		3.25	3.4						
9	2.25			3.25			4.8	3.65	4.5	1.75	1.0	1.2
10		2.4	3.0		3.2	3.7						
11	2.3			3.2			4.6	2.9	4.1	1.7	1.1	1.2
12		2.4	2.95		3.0	3.7						
13	2.3			3.1			4.2	2.85	3.8	1.6	1.1	1.25
14		2.4	2.9		2.95	3.9						
15	2.36			3.1			4.0	2.9	3.5	1.3	1.1	1.3
16		2.45	2.85		2.9	3.6			3.7			
17	2.4			3.1			4.2	2.85	3.6	1.2	1.1	1.8
18		2.42	2.9		3.0	3.3						
19	2.41			3.0			4.1	2.7	3.3	1.1	1.1	1.9
20		2.45	3.1		3.5	3.2						
21	2.43			3.0			4.0	2.65	3.15	1.1	1.1	1.85
22		2.5	3.0		4.1	3.2						
23	2.42			3.0			4.1	2.7	3.0	1.1	1.1	1.85
24		2.5	2.95		3.9	3.2						
25	2.45			3.6			3.9	2.6	2.9	1.0	1.2	1.85
26		2.5	2.95		3.8	4.2						
27	2.5			3.85			3.7	2.6	2.7	1.1	1.2	1.8
28		2.55	2.9		3.7	4.8		2.7				
29	2.5			3.6			3.6	2.8	2.8	1.1	1.2	1.8
30		2.65	2.9				4.7	6.85				
31	2.43			3.5				10.2		1.1	1.2	

Daily gage height, in feet, of Umatilla River near Umatilla, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.	1.8	2.3	2.8	4.1	5.2	4.6	4.0	3.7	2.7	1.9	1.4	1.5
2.	2.1	2.3	.....	4.1	.....	.....	.....	.....	.....	.....	.....	.....
3.	2.15	2.25	2.75	4.0	5.0	4.4	4.3	3.7	2.6	1.7	1.4	1.5
4.	2.1	2.3	.....	.....	.....	4.3	.....	.....	.....	.....	.....	.....
5.	2.0	2.3	2.7	4.0	5.0	4.3	4.3	3.6	2.55	1.6	1.4	2.1
6.	2.0	2.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7.	2.1	2.4	2.7	3.9	6.3	4.2	4.4	3.6	2.5	1.5	1.4	2.4
8.	2.1	2.4	.....	.....	.....	.....	5.4	.....	.....	.....	.....	.....
9.	2.1	2.4	3.1	3.8	5.8	4.2	5.4	3.6	2.4	1.5	1.5	2.1
10.	2.1	2.6	.....	.....	.....	.....	5.8	.....	.....	.....	.....	.....
11.	2.1	2.6	3.2	3.6	5.5	4.1	5.9	3.6	2.35	1.5	1.4	1.9
12.	2.1	2.6	.....	.....	.....	.....	5.4	.....	.....	.....	.....	.....
13.	2.1	2.6	3.3	3.5	5.2	4.0	5.1	3.4	2.3	1.5	1.4	1.8
14.	2.2	2.6	.....	.....	5.0	.....	.....	.....	2.6	.....	.....	.....
15.	2.2	3.9	3.3	3.4	4.8	3.9	5.0	3.4	2.5	1.5	1.4	2.25
16.	2.15	3.8	.....	.....	4.6	.....	.....	.....	.....	.....	.....	.....
17.	2.2	3.7	3.2	3.3	4.5	4.0	4.7	3.35	2.4	1.4	1.4	2.2
18.	2.2	3.6	3.15	.....	.....	.....	.....	.....	.....	.....	.....	.....
19.	2.2	3.4	3.1	3.2	4.4	4.1	4.4	3.3	2.4	1.4	1.4	2.2
20.	2.3	3.3	3.0	.....	4.8	.....	.....	3.4	.....	.....	.....	.....
21.	2.3	3.2	5.2	3.2	4.8	5.5	4.3	3.3	2.35	1.4	1.4	2.25
22.	2.25	3.1	6.1	.....	.....	.....	.....	.....	.....	.....	.....	.....
23.	2.25	3.1	5.2	3.1	4.7	5.5	4.3	3.2	2.3	1.4	1.4	2.25
24.	2.3	3.0	4.7	.....	.....	.....	.....	.....	.....	.....	.....	.....
25.	2.3	3.0	4.5	3.0	4.8	4.7	4.2	3.0	2.35	1.5	1.4	2.15
26.	2.3	2.95	4.6	.....	.....	.....	.....	.....	2.45	.....	.....	.....
27.	2.3	2.9	4.9	3.0	5.0	4.5	4.1	3.0	2.35	1.4	1.4	2.1
28.	2.3	2.9	4.65	.....	4.8	.....	.....	.....	2.1	.....	.....	.....
29.	2.35	2.9	4.45	3.0	.....	4.2	3.8	2.9	1.9	1.4	1.4	2.1
30.	2.4	2.85	4.3	.....	.....	.....	3.75	.....	1.9	.....	1.5	2.1
31.	2.35	.....	4.3	3.0	.....	4.1	.....	2.8	.....	1.4	1.5	.....
1907-8.												
1.	2.1	2.2	2.7	.....	.....	3.5	3.5	3.4	2.5	1.65	1.4	1.4
2.	2.1	2.25	2.7	.....	.....	3.5	3.5	3.4	2.5	1.65	1.4	1.4
3.	2.1	2.25	2.65	.....	.....	3.5	3.5	3.4	2.4	1.6	1.4	1.4
4.	2.1	2.25	2.65	.....	.....	3.4	3.8	3.3	2.4	1.6	1.4	1.5
5.	2.1	2.3	2.6	.....	.....	3.3	4.0	3.2	2.35	1.6	1.4	1.5
6.	2.0	2.3	2.6	.....	.....	3.2	3.9	3.2	2.3	1.5	1.4	1.5
7.	2.0	2.3	2.6	.....	.....	3.2	3.8	3.15	2.4	1.5	1.4	1.5
8.	2.0	2.3	2.6	.....	2.9	3.1	3.7	3.1	2.5	1.5	1.4	1.4
9.	2.0	2.3	2.55	.....	.....	3.0	3.7	3.1	2.5	1.5	1.4	1.4
10.	1.9	2.3	2.55	3.0	.....	3.0	3.8	3.0	2.6	1.5	1.4	1.4
11.	1.9	2.3	2.65	.....	.....	3.0	4.1	3.0	2.5	1.5	1.4	1.4
12.	1.9	2.3	2.7	.....	.....	3.0	4.25	2.9	2.5	1.5	1.4	1.4
13.	1.9	2.3	2.7	.....	.....	3.2	4.58	2.8	2.5	1.5	1.4	1.4
14.	1.9	2.3	2.7	.....	.....	3.7	4.55	2.75	2.45	1.92	1.4	1.4
15.	1.9	2.3	2.75	.....	2.95	4.9	4.5	2.7	2.5	2.0	1.4	1.4
16.	1.9	2.3	2.8	.....	.....	8.0	4.45	2.7	2.2	1.6	1.4	1.4
17.	1.9	2.3	2.8	.....	3.0	7.86	4.4	2.75	2.1	1.5	1.4	1.4
18.	1.9	2.35	2.8	.....	3.2	6.16	4.3	2.85	2.05	1.5	1.4	1.4
19.	1.9	2.35	2.75	.....	3.5	5.26	4.2	2.8	2.0	1.6	1.4	1.4
20.	1.9	2.25	2.75	.....	3.5	4.65	4.3	2.8	2.0	1.5	1.4	1.4
21.	1.95	2.25	2.75	.....	3.35	4.38	4.4	2.8	2.1	1.5	1.4	1.4
22.	1.95	2.3	.....	.....	3.3	4.33	4.3	2.85	2.1	1.5	1.4	1.4
23.	1.95	2.3	.....	.....	3.25	4.0	4.18	2.95	2.0	1.5	1.4	1.4
24.	1.95	2.3	.....	.....	3.2	4.0	4.05	2.95	2.0	1.4	1.4	1.5
25.	2.1	2.4	.....	.....	3.2	4.0	3.9	3.0	2.0	1.4	1.4	1.8
26.	2.1	2.45	4.23	.....	3.3	4.0	3.8	2.9	1.9	1.4	1.4	2.0
27.	2.1	2.8	4.68	2.9	3.35	4.0	3.6	2.8	1.9	1.4	1.4	2.0
28.	2.1	2.85	.....	.....	3.4	3.8	3.5	2.75	2.1	1.4	1.4	2.0
29.	2.1	2.8	.....	.....	3.4	3.7	3.45	2.7	2.0	1.4	1.4	2.1
30.	2.15	2.75	.....	.....	.....	3.65	3.4	2.65	1.7	1.4	1.4	2.1
31.	2.15	.....	.....	.....	.....	3.6	.....	2.6	.....	1.4	1.4	.....

Daily gage height, in feet, of Umatilla River near Umatilla, Oreg., for 1903-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	2.1	2.3	2.3	2.35	3.0	3.5	3.6	3.7	2.9	1.5	1.6	1.6
2	1.8	2.25		2.35		3.8	3.7	3.5	2.9		1.6	
3	1.8	2.25	2.3		3.0		3.7	3.5	2.9	1.5	1.6	1.6
4	1.85	2.25		2.3		4.0	3.6	3.6	2.9		1.6	
5	1.85	2.25	2.3				3.5	3.7	2.9	1.5	1.6	1.6
6	1.85	2.3		2.3	3.0	3.8	3.4	3.6	2.8		1.6	
7	1.85	2.35	2.3				3.4	3.5	2.9	1.5	1.6	1.6
8	1.7	2.35				3.6	3.4	3.5	2.9		1.6	
9	1.7	2.4	2.3	2.3			3.3	3.3	2.9	1.5	1.6	1.6
10	1.65				2.5		3.3	3.2	2.9			
11	1.65		2.3			3.6	3.5	3.1	2.9	1.5	1.6	1.6
12	1.65	2.35					3.5	3.1	2.8			
13	1.65					3.4	3.5	3.1	2.7	1.5	1.6	1.6
14	1.7	2.3			3.35		3.5	3.1	2.7			
15	1.75		2.5			3.4	3.6	3.1	2.7	1.5	1.6	1.6
16	1.8	2.3			3.9		3.7	3.1	2.6			
17	1.85		2.5			3.6	3.7	3.1	2.6	1.5	1.6	1.6
18	2.0	2.3			4.0		3.7	3.1	2.6	1.4		
19	2.15		2.5	6.0		3.6	3.7	3.1	2.5	1.4	1.6	1.6
20	2.25				3.7	3.5	3.6	3.2	2.0	1.4		
21	2.25	2.3	2.5	4.7			3.5	3.1	2.0	1.4	1.6	1.6
22	2.3				3.4	3.3	3.4	3.0	1.5	2.0		
23	2.35	2.3	2.45			3.2	3.4	3.0	1.5	1.8	1.6	1.6
24	2.35	2.25				3.2	3.3	3.0	1.5	1.8		
25	2.4			4.0	3.1	3.3	3.3	3.0	1.5	1.8	1.6	1.6
26	2.4		2.4			3.4	3.2	2.9	1.5	1.7		
27	2.4	2.3		3.6	3.0	3.5	3.6	2.8	1.5	1.7	1.6	1.7
28	2.4	2.3	2.4			3.6	3.95	2.9		1.7		
29	2.4					3.7	4.1	2.8	1.5	1.7	1.6	1.7
30	2.35	2.3	2.35	3.0		3.6	3.8	2.9		1.6		
31	2.35					3.6		3.0		1.6	1.6	
1909-10.												
1	1.7	2.8	3.7	2.95	3.6	4.3	4.0	3.05	2.45	1.85	1.85	2.3
2	1.8				3.5	5.0	4.0	2.95	2.45	1.85		
3	1.8	3.0	3.6	3.05	3.5	5.8	4.0	2.85	2.45	2.05	1.85	2.3
4					3.25	6.5	4.0	2.85	2.45			2.3
5	2.0	3.0	3.6	3.05	3.25	6.0	3.9	2.95	2.45	2.05	1.95	
6							5.5	3.8	2.95		2.05	2.3
7						5.0	4.2	2.85	2.45	2.05	2.05	2.3
8						4.8	4.2	2.85	2.65			2.3
9	2.3	3.0	3.6	3.05	3.05	4.6	4.2	2.85	2.65	2.05	2.05	
10						4.5	4.6	2.85	2.65			2.25
11	2.4	3.0	3.5	2.95	2.85	4.4	4.7	2.90	2.65	2.65	2.05	2.25
12						4.8	4.7	3.15		2.15	2.15	2.25
13	2.4	3.0	3.6	2.95	2.85	5.0	4.6	3.15	2.55	2.45	2.15	2.3
14						5.3	4.5	3.05	2.25			
15	2.3	3.0	3.7	2.95	3.05	5.5	4.4	2.95	1.95	2.05	2.15	2.3
16						5.3	4.2	2.85	1.85			
17	2.3	2.8	3.6	2.95	2.95	5.3	4.0	2.85	1.85	2.05	2.15	2.3
18						5.3	4.0	2.75			2.25	
19	2.3	2.8	3.4	4.2	2.85	5.3	4.0	2.65	1.85	1.95	2.25	2.3
20						5.7	4.0	2.55				
21	2.4	3.0	3.2	4.0	2.85	6.5	4.1	2.45	1.85	1.85	2.25	2.3
22				4.2		5.8	4.0	2.45				
23	2.4	4.2	3.2	4.3	2.85	5.8	4.0	2.45	1.85	1.85	2.25	2.3
24				4.7		5.8	3.8	2.45				2.3
25	2.5	4.0	3.2	4.6	3.8	5.7	3.6	2.45	1.85	1.85	2.25	2.3
26				4.3	4.1	5.4	3.6	2.45	1.85			2.3
27	2.6	3.6	3.2	4.0	4.1	4.7	3.5	2.45	1.85	1.85	2.25	2.3
28					4.1	4.5	3.25					2.3
29	2.6	3.5	3.1	3.7		4.3	3.15	2.45	1.85	1.85	2.25	2.3
30				3.6		4.1	3.15		1.85			2.3
31	2.6		3.1	3.4		4.0		2.45		1.85	2.3	

NOTE.—Discharge relation slightly affected by ice. Lower section of gage taken out by ice jam Jan. 17 or 18, 1909, and not replaced permanently until September, 1910; all readings below 3.5 feet during intervening period are uncertain.

Daily discharge, in second-feet, of Umatilla River near Umatilla, Oreg., for 1903-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1		171	1,540	627	843	1,820	4,220	2,480	508	25	30	11
2		130	1,610	627	731	1,790	3,700	2,280	531	25	30	12
3		88	1,480	627	731	1,750	3,880	2,050	578	25	25	14
4		88	1,340	627	627	1,790	4,160	1,970	627	130	21	14
5		88	1,150	627	627	1,820	4,070	1,900	531	443	19	14
6		106	962	531	627	2,250	3,880	1,820	508	402	17	14
7		124	903	531	731	2,670	4,640	1,820	486	363	16	14
8		148	843	531	731	4,930	4,440	1,820	443	291	14	14
9		171	787	531	731	7,350	4,640	1,680	443	227	14	14
10		231	731	627	731	5,570	4,830	1,540	402	198	14	14
11		291	679	843	627	3,790	5,990	1,750	363	171	12	14
12		327	627	1,080	627	3,230	6,580	1,680	258	258	11	14
13		363	579	1,210	627	2,670	6,870	1,480	258	363	10	14
14		363	531	1,610	627	2,630	7,550	1,480	227	227	9	21
15		363	531	1,480	627	2,590	8,030	1,410	227	124	9	30
16		662	531	1,750	1,340	2,470	7,550	1,410	212	124	9	30
17		962	1,070	1,750	2,050	2,360	5,700	1,340	198	124	9	30
18		903	1,610	1,610	1,900	2,200	4,640	1,280	184	130	9	30
19		843	1,480	1,610	1,750	2,050	3,700	1,280	171	105	9	30
20		735	1,340	1,480	1,610	2,050	4,070	1,340	146	94	9	30
21		627	1,550	1,340	1,480	2,050	4,440	1,210	124	88	9	30
22		171	1,750	1,210	1,750	2,120	3,880	1,210	105	88	9	30
23		148	2,510	1,680	1,080	2,050	3,340	1,210	88	88	9	30
24		124	2,360	1,610	1,080	1,970	3,000	1,210	88	88	9	43
25		124	2,200	1,480	1,210	1,900	1,970	1,080	88	88	10	62
26	124	1,910	1,340	1,210	1,820	1,750	1,750	962	81	74	11	58
27	124	1,610	1,150	1,210	1,750	1,610	2,200	786	74	62	11	52
28	124	1,480	962	1,080	1,750	1,480	2,360	678	58	46	11	46
29	124	1,410	846	962	1,750	2,670	2,510	578	43	36	11	43
30	124	1,480	731	962	-----	5,700	2,670	531	34	32	11	46
31	148	-----	731	843	-----	4,730	-----	486	-----	30	11	-----
1904-5.												
1	52	46	93	190	508	596	1,240	458	350	45	.1	.1
2	52	52	105	204	435	635	1,390	435	324	33	.1	.1
3	52	52	105	218	392	662	1,740	482	278	21	.2	.1
4	46	52	105	218	350	690	1,660	530	262	12	.2	.1
5	43	52	105	218	330	690	1,590	725	245	4	.2	.1
6	32	52	105	204	310	690	1,740	920	245	2.8	.2	.1
7	25	46	105	190	278	635	1,700	920	245	1.5	.2	.1
8	25	43	105	190	245	580	1,660	920	218	1.2	.2	.1
9	25	46	105	190	245	530	1,520	980	190	.8	.2	.1
10	32	52	105	190	245	480	1,380	1,040	168	.4	.1	.2
11	43	52	105	190	245	480	1,110	1,100	145	.1	.1	.4
12	46	52	105	134	245	480	1,040	1,170	128	.1	.1	21
13	52	52	105	278	206	480	1,010	1,100	110	.1	.8	41
14	62	52	105	278	168	480	980	1,040	91	.0	1.5	48
15	74	58	116	278	179	458	890	892	72	.0	.8	54
16	74	62	124	262	190	435	800	745	58	.0	.1	38
17	74	58	124	245	190	458	772	718	45	.0	.1	21
18	74	52	124	195	190	480	745	690	38	.0	.1	17
19	74	58	124	145	190	458	718	585	32	.1	.1	13
20	74	62	124	145	190	435	690	480	32	.1	.1	10
21	74	58	132	145	190	482	775	435	32	.1	.1	7.6
22	74	52	146	156	190	530	860	390	20	.1	.1	7.6
23	66	58	146	168	204	665	890	390	8	.1	.1	7.6
24	62	62	146	302	218	800	920	390	30	.1	.1	7.6
25	62	62	146	435	326	985	860	435	32	.1	.1	7.6
26	62	62	146	590	435	1,170	800	480	62	.1	.1	5.8
27	62	74	146	745	496	1,770	745	458	54	.1	.1	4.0
28	62	88	146	718	557	1,890	690	435	50	.4	.1	5.8
29	52	88	146	690	-----	1,890	590	412	45	.8	.1	7.6
30	43	88	146	635	-----	1,450	480	390	45	.4	.1	7.8
31	43	-----	146	580	-----	1,380	-----	370	-----	.1	.1	-----

Daily discharge, in second-feet, of Umatilla River near Umatilla, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	8	68	133	252	725	1,060	3,680	775	9,200	127	0.0	0.2
2	20	68	138	223	675	1,120	3,240	725	5,420	104	.0	.2
3	32	68	142	194	650	1,000	2,790	675	3,860	80	.0	.2
4	31	68	145	194	625	885	2,620	625	3,770	59.3	.0	.2
5	30	68	228	194	600	830	2,460	575	3,680	38.5	.0	.2
6	32	68	310	257	575	775	2,460	508	3,320	25.7	.0	.2
7	33	66	310	320	552	725	2,460	442	2,960	13.0	.0	.2
8	36	64	310	425	530	675	2,540	401	2,540	7.8	.0	.2
9	38	63	310	530	508	838	2,620	360	2,130	2.5	.0	.2
10	42	62	310	508	485	1,000	2,460	306	1,820	2.0	.0	.2
11	45	62	294	485	402	1,000	2,290	252	1,520	1.5	.1	.2
12	45	62	278	442	320	1,000	1,980	238	1,320	1.1	.1	.2
13	45	62	262	400	303	1,120	1,670	223	1,120	.7	.1	.2
14	50	62	245	400	286	1,250	1,520	238	948	.5	.1	.3
15	55	67	232	400	269	1,070	1,380	252	775	.3	.1	.3
16	58	72	218	400	252	885	1,520	238	1,000	.2	.1	1.9
17	62	69	232	400	286	730	1,670	223	885	.2	.1	3.5
18	63	66	245	360	320	575	1,600	184	730	.2	.1	5.5
19	64	69	318	320	548	530	1,520	146	575	.1	.1	7.5
20	66	72	390	320	775	485	1,450	136	508	.1	.1	6.5
21	68	78	350	320	1,150	485	1,380	127	442	.1	.1	5.5
22	67	83	310	320	1,520	485	1,450	136	381	.1	.1	5.5
23	66	83	294	320	1,380	485	1,520	146	320	.1	.1	5.5
24	69	83	278	602	1,250	485	1,380	127	286	.0	.2	5.5
25	72	83	278	885	1,180	1,080	1,250	108	252	.0	.2	5.5
26	78	83	278	1,040	1,120	1,670	1,120	108	199	.0	.2	4.5
27	83	90	262	1,190	1,060	2,140	1,000	108	146	.1	.2	3.5
28	83	96	245	1,040	1,000	2,620	942	146	170	.1	.2	3.5
29	83	112	245	885	-----	2,540	885	194	194	.1	.2	3.5
30	76	128	245	830	-----	2,460	830	6,560	160	.1	.2	3.4
31	68	-----	248	775	-----	3,070	-----	15,200	-----	.1	.2	-----
1906-7.												
1	3.5	45	194	1,520	3,310	2,290	1,380	995	160	8.0	.4	.5
2	21	45	182	1,520	3,130	2,130	1,600	995	140	4.8	.4	.5
3	26	38	170	1,380	2,960	1,970	1,820	995	120	1.5	.4	.5
4	21	45	158	1,380	2,960	1,820	1,820	938	112	.7	.4	11.2
5	13	45	146	1,380	2,960	1,820	1,820	880	105	.7	.4	22
6	13	52	146	1,310	4,280	1,740	1,900	880	98	.6	.4	45
7	21	60	146	1,240	5,600	1,660	1,970	880	90	.5	.4	68
8	21	60	273	1,180	5,030	1,660	3,680	880	79	.5	.4	45
9	21	60	400	1,120	4,460	1,660	3,680	880	68	.5	.5	22
10	21	108	442	1,000	4,160	1,590	4,460	880	63	.5	.4	15
16	21	108	485	880	3,860	1,520	4,680	880	58	.5	.4	8.0
17	21	108	530	825	3,580	1,450	3,680	770	54	.5	.4	5.8
18	21	108	575	770	3,310	1,380	3,130	670	49	.5	.4	3.5
19	32	108	575	720	2,960	1,310	3,040	670	120	.5	.4	23
14	32	1,250	575	670	2,620	1,240	2,960	670	90	.5	.4	42
16	26	1,120	530	625	2,290	1,310	2,700	648	79	.4	.4	38
17	32	1,000	485	580	2,130	1,380	2,450	625	68	.4	.4	34
18	32	885	442	538	2,050	1,450	2,210	602	68	.4	.4	34
19	32	675	400	495	1,970	1,520	1,970	580	68	.4	.4	34
20	45	575	320	495	2,620	2,690	1,890	670	63	.4	.4	38
21	45	485	3,310	495	2,620	3,860	1,820	580	58	.4	.4	42
22	38	400	5,020	455	2,540	3,860	1,820	538	54	.4	.4	42
23	38	400	3,310	415	2,450	3,860	1,820	495	49	.4	.4	42
24	45	320	2,460	378	2,540	3,160	1,740	418	54	.4	.4	35
25	45	320	2,130	340	2,620	2,450	1,660	340	58	.5	.4	28
26	45	286	2,290	340	2,790	2,290	1,500	340	79	.4	.4	25
27	45	252	2,790	340	2,960	2,130	1,520	340	58	.4	.4	22
28	45	252	2,370	340	2,620	1,900	1,320	305	22	.4	.4	22
29	52	252	2,050	340	-----	1,660	1,120	270	8	.4	.4	22
30	60	223	1,820	340	-----	1,500	1,060	240	8	.4	.5	22
31	52	-----	1,820	340	-----	1,520	-----	210	-----	.4	.5	-----

Daily discharge, in second-feet, of Umatilla River near Umatilla, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	22	34	160	430	300	770	770	670	90	1.1	0.4	0.4
2.....	22	42	160	430	270	770	770	670	90	1.1	.4	.4
3.....	22	42	140	450	270	770	770	670	68	.7	.4	.4
4.....	22	42	140	400	270	670	1,120	580	68	.7	.4	.5
5.....	22	49	120	420	200	580	1,380	495	58	.7	.4	.5
6.....	14	49	120	370	200	495	1,240	495	49	.5	.4	.5
7.....	14	49	120	370	200	495	1,120	455	68	.5	.4	.5
8.....	14	49	120	350	270	415	995	415	90	.5	.4	.4
9.....	14	49	105	350	270	340	995	415	90	.5	.4	.4
10.....	8.0	49	105	340	280	340	1,120	340	120	.5	.4	.4
11.....	8.0	49	140	340	320	340	1,520	340	90	.5	.4	.4
12.....	8.0	49	160	340	330	340	1,740	270	90	.5	.4	.4
13.....	8.0	49	160	370	330	495	2,200	210	90	.5	.4	.4
14.....	8.0	49	160	340	310	995	2,210	185	79	9.2	.4	.4
15.....	8.0	49	185	300	305	2,790	2,130	160	90	14	.4	.4
16.....	8.0	49	210	300	320	10,200	2,050	160	34	.7	.4	.4
17.....	8.0	49	210	300	340	9,700	1,970	185	22	.5	.4	.4
18.....	8.0	58	210	300	495	5,280	1,820	210	18	.5	.4	.4
19.....	8.0	58	185	300	770	3,420	1,660	240	14	.7	.4	.4
20.....	8.0	42	185	300	770	2,370	1,820	210	14	.5	.4	.4
21.....	11	42	185	330	625	1,940	1,970	210	22	.5	.4	.4
22.....	11	49	330	350	580	1,800	1,820	240	22	.5	.4	.4
23.....	11	49	800	390	538	1,380	1,640	305	14	.5	.4	.4
24.....	11	49	1,500	330	495	1,380	1,450	305	14	.4	.4	.5
25.....	22	68	3,000	300	495	1,380	1,240	340	14	.4	.4	3.5
26.....	22	79	1,710	280	580	1,380	1,120	270	8.0	.4	.4	14
27.....	22	210	2,420	270	625	1,380	850	210	8.0	.4	.4	14
28.....	22	210	1,100	270	670	1,120	770	185	22	.4	.4	14
29.....	22	210	800	270	670	995	720	160	14	.4	.4	22
30.....	28	185	600	270	.....	938	670	140	1.5	.4	.4	22
31.....	28	.....	500	270	.....	880	.....	120	.....	.4	.4	.....
1908-9.												
1.....	22	49	49	58	340	770	880	995	270	.5	.7	.7
2.....	3.5	42	49	58	340	1,120	995	770	270	.5	.7	.7
3.....	3.5	42	49	54	340	1,250	995	770	270	.5	.7	.7
4.....	5.8	42	49	49	340	1,380	880	880	270	.5	.7	.7
5.....	5.8	42	49	49	340	1,250	770	995	270	.5	.7	.7
6.....	5.8	49	49	49	340	1,120	670	880	210	.5	.7	.7
7.....	5.8	58	49	49	278	1,000	670	770	270	.5	.7	.7
8.....	1.5	58	49	49	215	880	670	770	270	.5	.7	.7
9.....	1.5	68	49	49	152	880	580	590	270	.5	.7	.7
10.....	1.1	65	49	400	90	880	580	495	270	.5	.7	.7
11.....	1.1	61	49	700	224	880	770	415	270	.5	.7	.7
12.....	1.1	58	59	700	358	775	770	415	210	.5	.7	.7
13.....	1.1	54	69	700	491	670	770	415	160	.5	.7	.7
14.....	1.5	49	80	700	625	670	770	415	160	.5	.7	.7
15.....	2.5	49	90	700	935	670	880	415	160	.5	.7	.7
16.....	3.5	49	90	700	1,240	775	995	415	120	.5	.7	.7
17.....	5.8	49	90	1,000	1,310	880	995	415	120	.5	.7	.7
18.....	14	49	90	3,000	1,380	880	995	415	120	.4	.7	.7
19.....	28	49	90	4,910	1,190	880	995	415	90	.4	.7	.7
20.....	42	49	90	3,680	995	770	880	495	14	.4	.7	.7
21.....	42	49	90	2,450	832	675	770	415	14	.4	.7	.7
22.....	49	49	84	2,180	670	580	670	340	.5	14	.7	.7
23.....	58	49	79	1,920	585	495	670	340	.5	3.5	.7	.7
24.....	58	42	76	1,650	500	495	580	340	.5	3.5	.7	.7
25.....	68	44	72	1,380	415	580	580	340	.5	3.5	.7	.7
26.....	68	46	68	1,130	378	670	495	270	.5	1.5	.7	1.1
27.....	68	49	68	880	340	770	880	210	.5	1.5	.7	1.5
28.....	68	49	68	700	555	880	1,310	270	.5	1.5	.7	1.5
29.....	68	49	63	520	.....	995	1,520	270	.5	1.5	.7	1.5
30.....	58	49	58	340	.....	880	1,120	270	.5	.7	.7	1.5
31.....	58	.....	55	340	.....	880	.....	340	.....	.7	.7	.....

Daily discharge, in second-feet, of Umatilla River near Umatilla, Oreg., for 1903-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.5	210	995	305	880	1,820	1,380	378	79	5.8	5.8	49
2.....	3.5	275	938	340	770	2,960	1,380	305	79	5.8	5.8	49
3.....	3.5	340	880	378	770	4,460	1,380	240	79	18	5.8	49
4.....	8.8	340	880	378	538	6,060	1,380	240	79	18	5.8	49
5.....	14	340	880	378	538	4,910	1,240	305	79	18	11	49
6.....	18	340	938	378	495	3,860	1,120	305	79	18	18	49
7.....	22	340	995	378	455	2,960	1,660	240	79	18	18	49
8.....	36	340	938	378	416	2,620	1,660	240	140	18	18	49
9.....	49	340	880	378	378	2,290	1,660	240	140	18	18	46
10.....	58	340	825	340	305	2,130	2,290	240	140	18	18	42
11.....	68	340	770	305	240	1,970	2,450	270	140	140	18	42
12.....	68	340	825	305	240	2,620	2,450	455	120	110	28	42
13.....	68	340	880	305	240	2,960	2,290	455	105	79	28	49
14.....	58	340	938	305	305	3,490	2,130	378	42	44	28	49
15.....	49	340	995	305	378	3,860	1,970	305	11	18	28	49
16.....	49	275	938	305	340	3,490	1,660	240	5.8	18	28	49
17.....	49	210	880	305	305	3,490	1,380	240	5.8	18	28	49
18.....	49	210	775	982	270	3,490	1,380	185	5.8	18	42	49
19.....	49	210	670	1,660	240	3,490	1,380	140	5.8	11	42	49
20.....	58	275	582	1,520	240	4,250	1,380	105	5.8	11	42	49
21.....	68	340	495	1,380	240	6,060	1,520	79	5.8	5.8	42	49
22.....	68	1,000	495	1,660	240	4,460	1,380	79	5.8	5.8	42	49
23.....	68	1,660	495	1,820	240	4,460	1,380	79	5.8	5.8	42	49
24.....	79	1,570	495	2,450	680	4,460	1,120	79	5.8	5.8	42	49
25.....	90	1,380	495	2,290	1,120	4,250	880	79	5.8	5.8	42	49
26.....	105	1,180	495	1,820	1,520	3,670	880	79	5.8	5.8	42	49
27.....	120	880	495	1,380	1,520	2,450	770	79	5.8	5.8	42	49
28.....	120	625	455	1,180	1,520	2,130	538	79	5.8	5.8	42	49
29.....	120	770	415	995	.....	1,820	455	79	5.8	5.8	42	49
30.....	120	880	415	880	.....	1,520	455	79	5.8	5.8	42	49
31.....	120	.....	415	670	.....	1,380	.....	79	.....	5.8	49	.....

NOTE.—Daily discharge determined as follows: 1903, 1904, and 1906. From rating curves well defined between 10 and 6,000 second-feet; 1905 and 1907 to 1910. From curves well defined above 10 second-feet. Discharge interpolated for days on which gage was not read except Dec. 22, 1907, to Feb. 16, 1908, and Jan. 10-18, 1909, when they were estimated with the aid of a hydrograph following the rise and fall at the Yoakum station.

Monthly discharge of Umatilla River near Umatilla, Oreg., for 1903-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903-4.					
October 22-31.....	171	124	134	2,660	A.
November.....	2,510	88	810	48,200	A.
December.....	1,750	531	1,100	67,800	A.
January.....	1,750	531	1,050	64,500	A.
February.....	2,050	627	1,210	69,700	A.
March.....	7,350	1,480	2,770	170,000	A.
April.....	8,030	1,750	4,390	261,000	B.
May.....	2,480	486	1,410	86,800	A.
June.....	627	34	269	16,000	A.
July.....	443	25	147	9,040	A.
August.....	30	9	13.2	812	B.
September.....	62	11	27.3	1,620	B.
The period.....				798,000	
1904-5.					
October.....	74	25	54.6	3,360	A.
November.....	88	43	58.2	3,460	A.
December.....	146	93	122	7,500	A.
January.....	745	145	301	18,500	A.
February.....	557	168	284	15,800	A.
March.....	1,890	435	768	47,200	A.
April.....	1,740	480	1,070	63,700	A.
May.....	1,170	370	662	40,700	A.
June.....	350	8.0	121	7,200	B.
July.....	45	.0	4.02	247	D.
August.....	1.5	.1	.21	13	D.
September.....	54	.1	11.1	660	D.
The year.....	1,890	.0	288	208,000	

Monthly discharge of Umatilla River near Umatilla, Oreg., for 1903-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....	83	8	53.8	3,310	B.
November.....	128	62	74.8	4,450	A.
December.....	390	133	261	16,000	A.
January.....	1,190	194	492	30,300	A.
February.....	1,520	252	691	38,400	A.
March.....	3,070	485	1,130	69,500	A.
April.....	3,680	830	1,860	111,000	A.
May.....	15,200	108	983	60,400	A.
June.....	9,200	146	1,690	101,000	A.
July.....	127	.0	15.0	922	C.
August.....	.2	.0	.09	6	D.
September.....	7.5	.2	2.46	146	D.
The year.....	15,200	.0	603	435,000	
1906-7.					
October.....	60	3.5	31.9	1,960	C.
November.....	1,250	38.5	323	19,200	A.
December.....	5,020	146	1,180	72,600	A.
January.....	1,520	340	766	47,100	A.
February.....	5,600	1,970	3,120	173,000	A.
March.....	3,860	1,240	2,000	123,000	A.
April.....	4,680	1,060	2,280	136,000	A.
May.....	995	210	647	39,800	A.
June.....	160	8	73.3	4,360	A.
July.....	8	.4	.89	54.7	C.
August.....	.5	.4	.41	25.2	C.
September.....	68	.5	26.4	1,570	B.
The year.....	5,600	.4	871	619,000	
1907-8.					
October.....	28	8	15.0	922	B.
November.....	240	34	71.2	4,240	A.
December.....	3,000	105	517	31,800	C.
January.....	450	270	337	20,700	C.
February.....	770	200	417	24,000	B.
March.....	10,200	340	1,820	112,000	A.
April.....	2,260	670	1,390	82,700	A.
May.....	670	120	318	19,600	A.
June.....	120	1.5	49.0	2,920	A.
July.....	14	.4	1.26	77.5	C.
August.....	.4	.4	.40	24.6	C.
September.....	22	.4	3.32	198	C.
The year.....	10,200	.4	412	299,000	
1908-9.					
October.....	68	1.1	26.4	1,620	B.
November.....	68	42	50.2	2,990	A.
December.....	90	49	66.4	4,080	A.
January.....	4,910	49	1,000	61,500	C.
February.....	1,380	90	564	31,300	B.
March.....	1,380	495	848	52,100	A.
April.....	1,520	495	837	49,800	A.
May.....	995	210	501	30,800	A.
June.....	270	.5	136	8,090	B.
July.....	14	.4	1.37	84	C.
August.....	.7	.7	.70	43	D.
September.....	1.5	.7	.82	49	D.
The year.....	4,910	.4	336	242,000	
1909-10.					
October.....	120	1.5	59.9	3,680	C.
November.....	1,660	210	544	32,400	A.
December.....	995	415	728	44,800	A.
January.....	2,450	305	853	52,400	B.
February.....	1,520	240	551	30,600	B.
March.....	6,060	1,380	3,350	206,000	A.
April.....	2,450	455	1,430	85,100	A.
May.....	455	79	206	12,700	B.
June.....	140	5.8	49.3	2,930	B.
July.....	140	5.8	22.1	1,360	B.
August.....	49	5.8	29.2	1,800	B.
September.....	49	42	48.2	2,870	A.
The year.....	6,060	1.5	656	477,000	

OREGON LAND & WATER CO.'S DITCH NEAR UMATILLA, OREG.

Location of headgate.—Left bank of Umatilla River 2 miles above Umatilla, in SW. $\frac{1}{4}$ sec. 28, T. 5 N., R. 28 E.

Measuring section.—Opposite the river gaging station below the upper flume and waste gate, one-fourth mile below the diversion point.

Discharge measurements of Oregon Land & Water Co.'s ditch near Umatilla, Oreg., in 1904-1908.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1904.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1907.	<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 18.....		0.0	July 19.....	1.83	18.2	May 7.....		40
30.....		.0	Sept. 15.....	1.83	16.0	June 26.....		43
Apr. 11.....		15	26.....	1.65	12.7	Aug. 28.....		24
May 13.....		12.4	Oct. 25.....	.75	.0			
Oct. 24.....		^a 13	Nov. 4.....	1.53	9.8	1908.		
			9.....	1.54	9.4	June 6.....		45
1905.			1906.					
Feb. 28.....	2.00	27.5	May 7.....		44			
Mar. 27.....	1.87	22.9	Nov. 25.....		13			
Apr. 10.....	2.00	29.6						
May 12.....	2.13	36.1						

^a Estimated.

Daily gage height, in feet, of Oregon Land & Water Co.'s ditch near Umatilla, Oreg., for 1905.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1.....		1.8		2.35	2.4		1.71	1.68	
2.....	1.95		2.0			1.73			1.53
3.....		1.8		2.15	2.4		1.73	1.71	
4.....	1.9		2.0			1.7			1.53
5.....		1.8		2.15	2.2		1.75	1.55	
6.....	1.95	1.8	2.0			1.7			1.53
7.....				2.15	2.0		1.75	1.57	
8.....	1.95	2.0	2.15			1.72			1.53
9.....				2.4	1.95		1.77	1.57	
10.....	2.0	2.0	2.15			1.72			1.67
11.....				2.4	1.9		1.77	1.58	
12.....	2.0	2.0	2.15			1.72			1.67
13.....				2.25	1.9		1.77	1.43	
14.....	2.0	2.0	1.9			1.67		(^a)	1.67
15.....				2.1	1.85		1.9		
16.....	1.85	2.0	2.15			1.75			
17.....				2.4	1.85		1.88		
18.....	1.85	2.0	1.8			1.73			
19.....				2.4	1.83		1.86		
20.....	1.85	1.95	2.05			1.71			
21.....				2.4	1.83		1.68		
22.....	1.85	2.1	2.05			1.7			
23.....				2.4	1.82		1.65		
24.....	1.9	2.1	2.4			1.7			
25.....				2.4	1.8		1.67		
26.....	1.9	2.1	2.2			1.7			
27.....	1.87			2.35	1.79		1.68		
28.....	1.9	2.1	2.3			1.7			
29.....	1.9			2.4	1.81		1.68		
30.....	1.85	2.1	2.4			1.7			
31.....					1.8			1.53	

^a Dry Oct. 14-30.

Monthly discharge of Oregon Land & Water Co.'s ditch near Umatilla, Oreg., for 1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
March.....	28.2	19.6	23.8	1,460
April.....	34.0	18.5	27.5	1,640
May.....	60.0	18.5	36.9	2,270
June.....	60.0	34.0	52.2	3,110
July.....	60.0	18.1	26.8	1,650
August.....	17.1	13.4	15.0	922
September.....	23.1	12.7	16.6	988
October.....	14.9	.0	4.89	301
November.....	13.4	9.2	10.8	300
The period.....				12,600

NOTE.—Mean for actual number of days recorded taken as the mean for the entire month.

McKAY CREEK NEAR PENDLETON, OREG.

Location.—In sec. 8, T. 2 N., R. 32 E., at footbridge near residence of C. W. Lyman, 2 miles west of Pendleton.

Records presented.—May 23, 1903, to July 6, 1904.

Drainage area.—236 square miles.

Gage.—Vertical staff.

Channel.—Gravel; shifts slightly.

Discharge measurements.—Made from footbridge.

Diversions.—Considerable part of low-water flow probably diverted above station for irrigation.

Accuracy.—Results fair.

Discharge measurements of McKay Creek near Pendleton, Oreg., in 1903-4.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1904.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 23	F. W. Huber.....	1.10	46	Mar. 5	H. A. Yates.....	2.20	434
May 25	do.....	1.10	34	Mar. 11	do.....	3.05	740
June 29	E. I. Davis.....	1.10	31	Apr. 12	do.....	3.90	1,100
June 15	J. T. Whistler.....	.81	11	June 2	W. C. Sawyer.....	1.22	25
July 6	do.....	.78	5				
July 31	J. H. Lewis.....	.70	3.8				
Oct. 8	Lewis and Yates.....	1.10	25				

Daily gage height, in feet, of McKay Creek near Pendleton, Oreg., for 1903-4.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....		1.00	0.80	0.70	0.70	16.....		0.80	0.75	0.70	1.20
2.....		1.00	.80	.70	.70	17.....		.80	.75	.70	1.20
3.....		1.00	.80	.70	.70	18.....		.80	.75	.70	1.20
4.....		1.00	.80	.70	.70	19.....		.80	.75	.70	1.05
5.....		1.00	.80	.70	.70	20.....		.80	.75	.70	1.05
6.....		.90	.75	.70	.70	21.....		.80	.75	.70	1.00
7.....		.90	.75	.70	.70	22.....		.80	.75	.70	1.00
8.....		.90	.75	.70	.70	23.....	1.10	.80	.75	.70	1.00
9.....		.90	.75	.70	.70	24.....		1.10	.80	.75	1.00
10.....		.90	.75	.70	.70	25.....		1.10	.80	.75	.95
11.....		.85	.75	.70	.70	26.....	1.10	.80	.75	.70	.95
12.....		.85	.75	.70	.70	27.....	1.10	.80	.70	.70	.95
13.....		.85	.75	.70	1.00	28.....	1.10	.80	.70	.70	.95
14.....		.85	.75	.70	1.35	29.....	1.10	.80	.70	.70	.90
15.....		.80	.75	.70	1.30	30.....	1.10	.80	.70	.70	.90
						31.....	1.10	.70	.70	.70	.90

Daily gage height, in feet, of McKay Creek near Pendleton, Oreg., for 1903-4—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1903-4.										
1.....	0.90	1.00	1.60	1.55	1.50	2.00	3.35	2.00	1.15	0.90
2.....	.90	1.00	1.60	1.45	1.50	2.00	3.30	2.00	1.25	.90
3.....	.90	1.00	1.60	1.40	1.45	2.00	3.40	2.00	1.25	.90
4.....	.90	1.00	1.50	1.40	1.40	2.00	3.40	1.95	1.20	1.60
5.....	.90	1.00	1.50	1.40	1.50	2.20	3.28	1.90	1.20	1.45
6.....	.90	1.00	1.45	1.40	1.50	2.25	3.80	1.90	1.20	1.30
7.....	.90	1.10	1.40	1.40	1.50	3.20	3.40	1.85	1.20	.....
8.....	1.00	1.10	1.40	1.40	1.50	4.10	3.25	1.80	1.20	.....
9.....	1.00	1.20	1.30	1.50	1.50	3.95	3.80	1.75	1.20	.....
10.....	1.10	1.20	1.30	1.50	1.50	3.35	4.00	1.70	1.20	.....
11.....	1.10	1.20	1.30	1.70	1.50	3.00	3.80	1.70	1.20	.....
12.....	1.10	1.25	1.30	1.90	1.50	2.50	3.80	1.60	1.20	.....
13.....	1.10	1.35	1.30	2.00	2.35	2.45	3.80	1.60	1.20	.....
14.....	1.10	1.45	1.30	2.30	2.50	2.40	3.80	1.55	1.20	.....
15.....	1.10	1.60	2.00	2.40	2.50	2.40	3.55	1.55	1.10	.....
16.....	1.10	1.60	2.00	2.30	2.35	2.40	3.50	1.50	1.05	.....
17.....	1.10	1.50	2.00	2.15	2.20	2.40	3.30	1.50	1.00	.....
18.....	1.10	1.50	1.90	2.10	2.15	2.40	3.05	1.50	1.00	.....
19.....	1.10	1.40	1.85	2.00	2.00	2.40	3.00	1.45	1.00	.....
20.....	1.10	1.40	1.80	1.85	2.00	2.42	2.90	1.45	.97	.....
21.....	1.10	1.40	2.25	1.85	1.90	2.40	2.85	1.40	.95	.....
22.....	1.10	2.45	2.30	1.95	2.40	2.25	2.80	1.40	.90	.....
23.....	1.10	2.50	2.30	2.10	2.50	2.12	2.55	1.38	.90	.....
24.....	1.00	2.50	2.25	2.00	2.50	2.09	2.40	1.35	.90	.....
25.....	1.00	2.40	2.20	2.00	2.25	1.95	2.30	1.30	.90	.....
26.....	1.00	2.40	2.10	1.90	2.20	1.90	2.30	1.28	.90	.....
27.....	1.00	2.30	2.05	1.85	2.15	1.90	2.25	1.25	.90	.....
28.....	1.00	2.00	2.00	1.75	2.10	2.10	2.20	1.20	.90	.....
29.....	1.00	2.00	2.00	1.70	2.00	3.35	2.10	1.20	.90	.....
30.....	1.00	1.70	1.95	1.60	.....	4.25	2.00	1.20	.90	.....
31.....	1.00	.....	1.85	1.55	.....	3.40	.....	1.18	.....	.....

Daily discharge, in second-feet, of McKay Creek near Pendleton, Oreg., for 1903-4.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.											
1.....		23	8	4	4	16.....		8	6	4	58
2.....		23	8	4	4	17.....		8	6	4	58
3.....		23	8	4	4	18.....		8	6	4	58
4.....		23	8	4	4	19.....		8	6	4	30
5.....		23	8	4	4	20.....		8	6	4	30
6.....		14	6	4	4	21.....		8	6	4	23
7.....		14	6	4	4	22.....		8	6	4	23
8.....		14	6	4	4	23.....		37	8	6	4
9.....		14	6	4	4	24.....		37	8	6	4
10.....		14	6	4	4	25.....		37	8	6	4
11.....		11	6	4	4	26.....		37	8	6	4
12.....		11	6	4	4	27.....		37	8	4	4
13.....		11	6	4	23	28.....		37	8	4	4
14.....		11	6	4	108	29.....		37	8	4	4
15.....		8	6	4	90	30.....		37	8	4	4
						31.....		.....	4	4	.....

Daily discharge, in second-feet, of McKay Creek near Pendleton, Oreg., for 1903-4—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1903-4.										
1.....	14	23	198	179	160	350	862	280	16	2
2.....	14	23	198	142	160	350	840	280	28	2
3.....	14	23	198	125	142	350	885	280	28	2
4.....	14	23	160	125	125	350	885	262	21	140
5.....	14	23	160	125	160	434	831	245	21	90
6.....	14	23	142	125	160	455	1,060	245	21	45
7.....	14	37	125	125	160	875	885	228	21	.....
8.....	23	37	125	125	160	1,200	819	210	21	.....
9.....	23	58	90	160	160	1,130	1,060	192	21	.....
10.....	37	58	90	160	160	862	1,160	175	21	.....
11.....	37	58	90	236	160	705	1,060	175	21	.....
12.....	37	74	90	312	160	480	1,060	140	21	.....
13.....	37	108	90	350	497	460	1,060	140	21	.....
14.....	37	142	90	476	560	440	1,060	122	21	.....
15.....	37	198	350	518	560	440	952	122	10	.....
16.....	37	198	350	476	497	440	930	105	8	.....
17.....	37	160	350	416	434	440	840	105	5	.....
18.....	37	160	312	392	413	440	728	105	5	.....
19.....	37	125	293	350	350	440	705	90	5	.....
20.....	37	125	274	293	350	448	660	90	4	.....
21.....	37	125	455	293	312	440	638	75	4	.....
22.....	37	539	476	331	518	380	615	75	2	.....
23.....	37	560	476	392	560	328	502	69	2	.....
24.....	23	560	455	350	560	280	440	60	2	.....
25.....	23	518	434	350	455	262	400	45	2	.....
26.....	23	518	392	312	434	245	400	42	2	.....
27.....	23	476	371	293	413	245	380	34	2	.....
28.....	23	350	350	255	392	320	360	21	2	.....
29.....	23	350	350	236	350	862	320	21	2	.....
30.....	23	236	331	198	.....	1,280	280	21	2	.....
31.....	23	.....	293	179	.....	885	.....	19	.....	.....

NOTE.—Daily discharge determined from two fairly well defined rating curves, applicable May 23, 1903, to Mar. 7, 1904, and Mar. 8 to July 6, 1904.

Monthly discharge of McKay Creek near Pendleton, Oreg., for 1903-4.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
May 23-31.....	37	37	37.0	660	C.
June.....	23	8	11.9	708	C.
July.....	8	4	6.0	369	C.
August.....	4	4	4.0	246	C.
September.....	108	4	23.2	1,380	C.
The period.....	.....	.....	.....	3,360	.....
1903-4.					
October.....	37	14	27.3	1,680	C.
November.....	560	23	197	11,700	C.
December.....	476	90	263	16,200	C.
January.....	518	125	271	16,700	C.
February.....	560	125	328	18,900	B.
March.....	1,280	245	536	33,000	B.
April.....	1,160	280	756	45,000	B.
May.....	280	19	131	8,060	B.
June.....	28	2	12.1	720	C.
July 1-6.....	140	2	46.8	557	C.
The period.....	.....	.....	.....	153,000	.....

CANALS IN UMATILLA RIVER BASIN.

Systematic measurements were made by the United States Reclamation Service of all canals diverting from Umatilla River from August, 1905, to May, 1906.

Brief notes in regard to the canals and the lists of measurements are given below.

Discharge measurements of Horseshoe Irrigation Co.'s ditch near Yoakum in 1906.

Date.	Gage height.	Discharge.
March 3.....	<i>Feet.</i>	<i>Sec.-ft.</i>
May 4.....		2.5 .87

NOTE.—Measured 300 feet below headgate, which is situated in the NE. $\frac{1}{4}$ sec. 11, T. 2 N., R. 30 E., 1 mile above Yoakum, just above the Yoakum gaging station.

Discharge measurements of Slusher & Gould ditch near Nolin, Oreg., in 1905-6.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 18.....	0.71	1.74	Oct. 10.....	0.48	0.68	Nov. 20.....	0.40	0.39
Sept. 9.....	.44	.56	17.....	.46	.54	Dec. 21.....	.80	2.38
19.....	.30	.31	23.....	.49	.55			
25.....	.44	.65	30.....	.48	.56	1906.		
29.....	.55	.96	Nov. 7.....	.44	.48	Jan. 6.....	.77	2.0
Oct. 4.....	.50	.78	13.....	.30	.21	Mar. 3.....	.42	.9

NOTE.—Measured in a flume near head of ditch, which takes out on left bank of Umatilla River, in the NW. $\frac{1}{4}$ sec. 9, T. 2 N., R. 30 E., $1\frac{1}{2}$ miles above Nolin and 8 miles above Echo.

Discharge measurements of Lisle & Crane ditch near Echo, Oreg., in 1905.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 18.....		4.50	Sept. 14.....	1.43	4.92	Sept. 29.....	1.68	7.99
30.....	1.26	2.79	19.....	1.55	6.54	Oct. 9.....	1.61	6.84
Sept. 9.....	1.61	6.86	25.....	1.48	5.40	12.....	1.27	2.58

NOTE.—Measured in a flume just below where ditch is crossed by Oregon-Washington Railroad & Navigation Co.'s track. Ditch takes out on right bank of Umatilla River, 2 miles below Nolin, 5 miles above Echo, in SE. $\frac{1}{4}$ sec. 36, T. 3 N., R. 29 E.

Discharge measurements of Charles Lisle ditch at Echo, Oreg., in 1905-6.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 18.....	0.62	1.42	Oct. 21.....	0.80	1.88	Nov. 23.....	1.00	1.55
30.....	.64	.88	23.....	.80	2.18	Dec. 5.....	1.00	1.82
Sept. 8.....	1.31	4.74	26.....	.82	1.92	12.....	.96	1.73
19.....	1.16	4.96	30.....	.87	1.98			
25.....	.81	3.04	Nov. 2.....	.88	1.82	1906.		
Oct. 4.....	.71	2.44	7.....	.87	1.59	Jan. 6.....	.99	1.9
7.....	.76	2.41	10.....	.90	1.56	17.....	.94	1.8
9.....	.77	2.44	13.....	.91	1.66	Feb. 8.....	.82	1.8
12.....	.78	2.26	16.....	.96	1.66	17.....	1.21	.94
17.....	.79	2.53	21.....	1.01	1.5	May 4.....	.98	3.85

NOTE.—Measured near intake. Ditch takes out on left bank of Umatilla River, $2\frac{1}{2}$ miles above Echo.

Discharge measurements of Henrietta mill ditch at Echo, Oreg., in 1905-6.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 18.....	1.19	5.20	Oct. 23.....	0.40	0.15	Dec. 21.....	1.61	5.66
19.....	1.14	5.10	26.....	.40	.22	27.....	1.57	5.58
30.....	.69	1.42	30.....	.80	1.27			
Sept. 8.....	.79	1.26	Nov. 2.....	.80	1.01	1906.		
23.....	.79	1.76	7.....	.77	.83	Jan. 6.....	1.58	5.2
25.....	.67	1.11	10.....	.73	.78	13.....	1.67	6.6
Oct. 4.....	.57	.58	13.....	.70	.73	17.....	1.58	7.0
7.....	.55	.49	16.....	.74	.69	Feb. 8.....	.89	.56
9.....	.52	.41	21.....	.70	.64	17.....	1.40	4.0
12.....	.50	.37	24.....	.63	.38	Mar. 3.....	1.82	7.8
17.....	.43	.26	Dec. 5.....	.48	.27	May 4.....	.99	1.3
21.....	.40	.15	12.....	.50	.25			

NOTE.—Headgate situated in the NE. $\frac{1}{4}$ sec. 27, T. 3 N., R. 29 E., 2 miles above Echo, on right bank of Umatilla River. Water formerly used to furnish power for Henrietta flour mill in Echo. During 1905 and 1906 portion of water was used for irrigation and remainder wasted into the river below mill.

Discharge measurements of Henrietta mill ditch wasteway at Echo, Oreg., in 1905-6.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 19.....		1.05	Oct. 17.....	0.19	0.13	Dec. 28.....	1.10	3.8
30.....	0.53	1.19	21.....	.12	.10			
Sept. 8.....	.44	.8	24.....	.13	.06	1906.		
23.....		.18	30.....	.45	.75	Jan. 6.....	1.13	4.3
23.....	.50	.96	Nov. 3.....	.44	.64	17.....	1.20	5.0
26.....	.44	.65	8.....	.39	.49	Feb. 8.....	.34	.18
Oct. 5.....	.34	.46	13.....	.33	.33	17.....	.92	4.86
10.....	.28	.26	16.....	.38	.30	Mar. 2.....	1.20	7.5
13.....	.19	.17	24.....	.42	.19			

Discharge measurements of Wilson & Co.'s ditch at Echo, Oreg., in 1905-1907.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 18.....	2.07	5.41	Oct. 9.....	1.82	1.93	Nov. 7.....	1.70	1.42
19.....	1.84	4.99	12.....	2.80	4.56			
30.....	1.22	1.48	17.....	1.91	2.11	1906.		
Sept. 8.....	1.50	1.26	21.....	1.72	1.52	Feb. 8.....	2.72	4.2
23.....	2.20	3.41	23.....	1.65	1.34	May 4.....	1.58	2.6
25.....	2.19	3.18	26.....	1.77	1.69			
Oct. 4.....	1.64	1.32	30.....	1.81	1.86	1907.		
7.....	1.75	1.66	Nov. 2.....	1.72	1.47	Aug. 27.....		3.1

NOTE.—Measured about 500 feet below waste gate. Headgate of ditch situated in the NE. $\frac{1}{4}$ sec. 27, T. 3 N., R. 29 E., 2 miles above Echo, just below the Henrietta mill diversion, on right bank of Umatilla River.

Discharge measurements of Allen ditch at Echo, Oreg., in 1905-1907.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 19.....		6.97	Oct. 21.....	0.65	12.11	Dec. 21.....	1.21	15.40
29.....		8.57	24.....	.63	12.17	28.....	1.24	14
Sept. 8.....		11.21	27.....	1.17	12.08			
16.....	0.42	3.14	31.....	1.15	11.94	1906.		
19.....	.41	3.07	Nov. 3.....	1.14	12.14	Jan. 5.....	1.25	13
23.....	.99	16.58	8.....	1.16	11.70	17.....	1.25	12
25.....	1.0	17.30	11.....	1.15	11.52	Mar. 2.....		2.8
30.....	1.07	23.13	14.....	1.17	11.97	May 5.....	1.15	29
Oct. 4.....	1.01	21.64	17.....	1.16	11.89			
7.....	.69	12.52	21.....	1.29	11.55	1907.		
9.....	.68	11.85	24.....	1.12	12.17	May 8.....		26
12.....	.67	11.97	Dec. 5.....	.92	7.76	June 25.....		9.6
17.....	.65	11.51	13.....	.92	3.44	Aug. 27.....		12

NOTE.—Measured one-eighth mile below headgate, which is situated in the NE. $\frac{1}{4}$ sec. 21, T. 3 N., R. 29 E., 1 mile above Echo, on left bank of Umatilla River. During later part of 1905 portion of water was wasted into Pioneer ditch and some into river.

Discharge measurements of Allen ditch wasteway at Echo, Oreg., in 1905-6.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
Sept. 23.....	.....	0.12	Oct. 24.....	0.47	2.42	Jan. 5.....	6.75	7.3
30.....	3.24		26.....	.25	.32	17.....	.....	10
Oct. 5.....	2.98		31.....	.25	.22	Feb. 9.....	.52	3.14
7.....	2.40		Nov. 2.....	.36	.37	17.....	.30	.47
9.....	2.28		Dec. 13.....	.....	1.17	Mar. 2.....	.28	.44
12.....	2.94		21.....	.81	10.08	May 5.....	.29	.7
18.....	0.48	2.53	27.....	.80	8.89			
21.....	.48	2.31						

Discharge measurements of Western Land & Irrigation Co.'s (Hinkle) ditch at Echo, Oreg., in 1905-1907.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
Oct. 27.....	1.36	5.86	Nov. 30.....	1.76	12.69	Feb. 17.....	1.50	9.3
31.....	1.39	6.29	Dec. 5.....	1.60	11.40	Mar. 2.....	1.73	14
Nov. 2.....	1.39	6.60	27.....	1.71	12.87	May 5.....	2.43	42
8.....	1.33	5.71						
10.....	1.50	7.70	1906.			1907.		
14.....	1.52	9.65	Jan. 5.....	1.70	14	May 3.....	.....	29
16.....	1.52	8.00	13.....	1.70	15	June 25.....	.....	10
21.....	1.74	13.78	17.....	1.71	15	Aug. 27.....	.....	14
23.....	1.74	13.24	Feb. 8.....	1.91	20			

NOTE.—Measured at wagon bridge just below waste gate. Headgate is situated in the NE. $\frac{1}{4}$ sec. 21, T. 3 N., R. 29 E., on left bank of Umatilla River. Ditch dry during August, September, and most of October, 1905. Waste so arranged that water may be turned into Allen ditch or Allen ditch wasteway.

Discharge measurements of Pioneer ditch at Echo, Oreg., in 1905-1907.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
Sept. 23.....	0.94	4.14	Oct. 31.....	0.76	2.62	Jan. 5.....	0.80	2.2
25.....	.51	1.31	Nov. 2.....	.60	1.61	17.....	.98	4.33
30.....	1.09	6.22	8.....	1.32	8.34	May 5.....	1.58	54
Oct. 5.....	.95	5.20	10.....	1.36	8.52			
7.....	.84	3.50	14.....	1.48	9.65	1907.		
9.....	.91	4.25	16.....	1.34	7.78	May 6.....	.....	18
12.....	1.09	6.63	21.....	1.43	8.63	June 25.....	.....	39
18.....	1.18	7.72	23.....	1.43	9.13			
21.....	1.23	7.74	Dec. 13.....	1.58	12.98			
24.....	1.26	7.64	21.....	.74	2.54			
26.....	.70	2.02	27.....	.73	1.71			

NOTE.—Measured from wagon bridge just below Allen ditch wasteway. Headgate situated in the NW. $\frac{1}{4}$ sec. 16, T. 3 N., R. 29 E., on left bank of Umatilla River, west of Echo. All water during latter part of September, October, and November, 1905, was waste from Allen ditch. During December a small portion came directly from river.

Discharge measurements of Maxwell ditch at Echo, Oreg., in 1905-1907.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 8		1.61	Oct. 21	0.88	8.62	Dec. 21	0.45	1.39
30 .....		.49	24 .....	.88	8.25	27 .....	.33	1.13
Sept. 8 .....		.99	26 .....	.85	7.48			
16	0.52	2.89	31 .....	.75	6.28	1906.		
19 .....	.47	2.25	Nov. 2 .....	.75	6.19	Jan. 5 .....	.31	.79
25 .....	.52	2.96	8 .....	.69	5.92	15 .....	.30	1.0
30	1.02	9.90	10 .....	.69	5.30	May 3		15
Oct. 5	1.24	13.65	14 .....	.69	5.23			
7	1.00	9.92	16 .....	.68	5.38	1907.		
9 .....	.98	9.61	21 .....	.66	4.72	May 5		22
12 .....	.95	9.46	23 .....	.64	4.64	Aug. 29		12
18 .....	.89	8.25	Dec. 13 .....	.44	2.26			

Discharge measurements of Maxwell ditch wasteway at Echo, Oreg., in 1905.

Date.	Dis-charge.	Date.	Dis-charge.	Date.	Dis-charge.
1905.	<i>Sec.-ft.</i>	1905.	<i>Sec.-ft.</i>	1905.	<i>Sec.-ft.</i>
Oct. 5	1.02	Oct. 18	1.14	Oct. 26	1.40
10	1.11	21	1.28	31	2.29
13	1.21	24	1.30	Nov. 2	2.07

NOTE.—Measured 1,000 feet below headgate, which is situated in the NE. $\frac{1}{4}$ sec. 8, T. 3 N., R. 29 E., on left bank of Umatilla River, 2 miles below Echo. One mile below head, water is carried under river in a siphon and surplus wasted into river.

Discharge measurements of Maxwell Land & Irrigation Co.'s (Hermiston) ditch below headgate near Hermiston, Oreg., in 1905-6.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 9		3.92	Oct. 20	0.50	12.28	Nov. 25	0.56	10.99
Sept. 15		23.83	25 .....	.48	12.18	Dec. 6		11.31
22	0.21	7.20	28 .....	.47	11.38	14		10.60
27 .....	.39	8.99	Nov. 1 .....	.47	11.16	28		11
30 .....	.48	11.14	3 .....	.53	11.10			
Oct. 3 .....	.49	11.77	9 .....	.52	10.93	1906.		
6 .....	.49	11.18	15 .....	.55	11.30	Jan. 15		11
11 .....	.50	11.80	18 .....	.54	11.16	May 7	1.34	39
14 .....	.54	10.90	22 .....	.54	10.63			

Discharge measurements of Maxwell Land and Irrigation Co.'s (Hermiston) ditch below second wasteway near Hermiston, Oreg., in 1905-6.

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 9		2.73	Oct. 11	0.35	4.10	Nov. 3	0.20	2.58
Sept. 22	0.45	6.17	14 .....	.28	2.96			
27 .....	.30	3.54	20 .....	.70	8.69	1906.		
30 .....	.45	5.55	25 .....	.70	8.42	Feb. 16 .....	.62	17
Oct. 3 .....	.50	6.38	28 .....	.62	7.66			
6 .....	.65	8.17	Nov. 1 .....	.50	5.73			

NOTE.—Measured just below headgate and below second waste gate. Ditch takes out on right bank of Umatilla River, 5 miles below Stanfield (Posters), in the SE. $\frac{1}{4}$ sec. 29, T. 4 N., R. 28 E.

Discharge measurements of Beitle ditch near Hermiston, Oreg., in 1905-6.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 9	0.71	0.96	Oct. 14	9.64	0.62	May 7	0.92	1.4
Sept. 15	0.71	1.08	20 .....	.81	1.40			
Oct. 3 .....	.50	.17	25 .....	.46	.07			
11 .....	.63	.54						

NOTE.—Measured just below waste gate. Ditch takes out on right bank of Umatilla River west of Hermiston, in the SE. $\frac{1}{4}$ sec. 8, T. 4 N., R. 28 E.

Discharge measurements of Brownell ditch near Umatilla, Oreg., in 1905-1907.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1905.	<i>Feet.</i>	<i>Sec.-ft.</i>	1906.	<i>Feet.</i>	<i>Sec.-ft.</i>
May 12	1.17	5.50	Nov. 18	1.09	1.98	Jan. 15	1.72	4.0
Sept. 26	1.17	3.90	22	1.09	1.96	May 7	1.58	10
Oct. 25	1.05	2.13	25	1.09	1.98			
28	1.05	1.72	Dec. 6	1.11	2.70	1907.		
Nov. 1	1.02	1.41	14	1.12	2.23	Apr. 25		9.6
3	1.00	1.41	20	1.14	2.58	May 7		8.6
9	1.09	1.95	29 .....	.98	.97	June 26		3.5
15	1.09	1.98				28		1.4

NOTE.—Measured below Oregon Railroad & Navigation Co.'s sidetrack. Ditch takes out on right bank of Umatilla River $1\frac{1}{2}$ miles above Umatilla, a few hundred feet below river-gaging station, in NW. $\frac{1}{4}$ sec. 21, T. 5 N., R. 28 E.

WILLOW CREEK BASIN.**GENERAL FEATURES.**

Willow Creek rises in the foothills of the Blue Mountains and flows northwestward into Columbia River near Arlington. Its drainage area throughout is practically timberless and is composed of high, rolling table-lands used for the production of wheat and as range for cattle and sheep. The creek is small but is subject to excessive and sudden floods. In 1903 this stream was the scene of the disaster at Heppner, where more than one hundred lives were lost from a sudden flood lasting scarcely more than an hour. The waters of the creek are used to some extent for irrigation in the immediate valley.

WILLOW CREEK NEAR ARLINGTON, OREG.

Location.—In sec. 26, T. 3 N., R. 22 E., at Rhea siding of Oregon-Washington Railroad & Navigation Co., 9 miles from Arlington, and about 5 miles from mouth of stream.

Records presented.—March 1, 1905, to July 21, 1906.

Drainage area.—910 square miles.

Gage.—Vertical staff fastened to wagon bridge used in 1905. New vertical staff gage used in 1906, one-fourth mile below old station and half a mile below Rhea siding.

Channel.—Rock and gravel; practically permanent.

Discharge measurements.—Made from footbridges or by wading.

Accuracy.—Station maintained only during high water; conditions not favorable for accurate results.

Discharge measurements of Willow Creek near Arlington, Oreg., in 1905-6.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 16	W. C. Sawyer.....	3.38	17.6	Feb. 7	F. C. Dillard.....	.....	33
Mar. 26	J. H. Lewis.....	3.77	56	Feb. 28	R. S. Hall.....	1.50	55
Apr. 9	.....do.....	3.85	69	Mar. 31	F. C. Dillard.....	.....	207
May 31	W. C. Sawyer.....	4.40	157	Apr. 19	J. C. Stevens.....	1.12	32
31	.....do.....	4.50	187	June 9	R. S. Hall.....	3.15	296
31	.....do.....	4.18	112	9	.....do.....	3.40	363
Aug. 17	.....do.....	3.00	1.3				
Oct. 24	Sawyer and Hall.....	3.11	3.7				
Dec. 19	Hall and Dillard.....	3.29	11.6				

Daily gage height, in feet, of Willow Creek near Arlington, Oreg., for 1905-6.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Day.	Mar.	Apr.	May.	June.	July.	Aug.
1905.							1905.						
1.....	3.7	3.8	2.9	3.75	3.0	3.0	16.....	3.6	3.4	3.3	3.2	2.9	3.0
2.....	3.7	4.0	2.8	3.75	3.0	3.0	17.....	3.7	3.4	3.25	3.0	2.9	3.0
3.....	3.7	4.1	2.8	3.7	3.0	2.8	18.....	3.7	3.5	3.25	3.0	2.9	3.0
4.....	3.6	4.1	2.9	3.7	3.0	2.8	19.....	3.7	3.4	3.3	3.0	2.8	3.1
5.....	3.6	4.0	2.8	3.7	3.0	2.8	20.....	3.8	3.35	3.3	3.0	2.8	3.1
6.....	3.6	3.95	2.8	3.7	3.0	2.9	21.....	3.8	3.35	3.3	3.0	2.8	.....
7.....	3.6	3.9	2.8	3.55	2.8	3.0	22.....	3.8	3.3	3.3	2.95	2.8	.....
8.....	3.5	3.9	2.8	3.45	2.8	3.0	23.....	3.8	3.1	3.2	2.9	2.8	.....
9.....	3.5	3.85	2.8	3.45	2.8	3.0	24.....	3.9	3.0	3.2	2.8	2.8	.....
10.....	3.5	3.85	2.8	3.45	3.0	3.0	25.....	4.0	3.0	3.3	5.4	2.8	.....
11.....	3.5	3.85	2.8	3.4	2.95	2.9	26.....	3.9	3.0	3.3	4.9	2.8	.....
12.....	3.5	3.8	2.8	3.4	2.9	2.9	27.....	3.9	2.9	3.3	3.6	2.8	.....
13.....	3.5	3.5	2.8	3.4	2.9	2.8	28.....	3.9	2.9	3.3	3.45	2.8	.....
14.....	3.5	3.45	3.5	3.3	2.9	3.0	29.....	3.9	2.9	3.3	3.3	2.9	.....
15.....	3.6	3.45	3.5	3.2	2.9	3.0	30.....	3.9	2.9	3.3	3.0	2.9	.....
							31.....	3.9	.....	a4.33	.....	3.0	.....
Day.	Mar.	Apr.	May.	June.	July.		Day.	Mar.	Apr.	May.	June.	July.	
1906.							1906.						
1.....	1.52	2.8	0.85	4.4	1.15		16.....	1.35	1.3	0.45	3.1	0.8	
2.....	1.52	2.7	.8	3.9	1.1		17.....	1.35	1.25	.45	2.4	.8	
3.....	1.5	2.5	.75	3.65	1.0		18.....	1.6	1.2	.45	2.2	.8	
4.....	1.52	2.4	.65	3.9	.95		19.....	1.5	1.15	.45	2.0	.8	
5.....	1.55	2.3	.6	4.05	.95		20.....	1.45	1.1	.45	1.9	.8	
6.....	1.5	2.2	.6	3.75	.95		21.....	1.4	1.1	.45	1.8	.8	
7.....	1.52	2.1	.6	3.5	.95		22.....	1.98	1.1	.45	1.6	.....
8.....	1.62	2.0	.6	3.2	.9		23.....	2.45	1.1	.45	1.5	.....
9.....	1.75	1.9	.55	3.0	.85		24.....	2.3	1.1	.45	1.4	.....
10.....	1.8	1.8	.5	3.1	.85		25.....	2.4	1.1	.5	1.35	.....
11.....	1.8	1.7	.5	2.8	.9		26.....	4.15	1.1	.5	1.25	.....
12.....	1.75	1.6	.45	2.6	.9		27.....	3.0	1.0	.6	1.2	.....
13.....	1.8	1.5	.45	2.6	.9		28.....	3.1	1.0	.55	1.2	.....
14.....	1.8	1.4	.45	2.45	.85		29.....	2.7	.9	.5	1.2	.....
15.....	1.75	1.35	.4	2.3	.8		30.....	2.4	.9	.67	1.15	.....
							31.....	2.4	.....	6.0	.....	.....

a Maximum gage height of the previous night, 5.8 feet; the flood from Rhea Creek came down in the night and receded before 5 a. m.; by 6 a. m. about the same stage had again been reached, the water coming from Willow Creek.

NOTE.—Some ice March 12 and 13, 1906; discharge not corrected.

Daily discharge, in second-feet, of Willow Creek near Arlington, Oreg., for 1905-6.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Day.	Mar.	Apr.	May.	June.	July.	Aug.
1905.							1905.						
1.....	48	60	0.6	54	1.3	1.3	16.....	38	20	13	7.0	0.6	1.3
2.....	48	87	.3	54	1.3	1.3	17.....	48	20	10	1.3	.6	1.3
3.....	48	103	.3	48	1.3	.3	18.....	48	28	10	1.3	.6	1.3
4.....	38	103	.6	48	1.3	.3	19.....	48	20	13	1.3	.3	3.8
5.....	38	87	.3	48	1.3	.3	20.....	60	16	13	1.3	.3	3.8
6.....	38	80	.3	48	1.3	.6	21.....	60	16	13	1.3	.3	.....
7.....	38	73	.3	33	.3	1.3	22.....	60	13	13	1.0	.3	.....
8.....	28	73	.3	24	.3	1.3	23.....	60	3.8	7	.6	.3	.....
9.....	28	66	.3	24	.3	1.3	24.....	73	1.3	7	.3	.3	.....
10.....	28	66	.3	24	1.3	1.3	25.....	87	1.3	13	488	.3	.....
11.....	28	66	.3	20	1.0	.6	26.....	73	1.3	13	299	.3	.....
12.....	28	60	.3	20	.6	.6	27.....	73	.6	13	38	.3	.....
13.....	28	28	.3	20	.6	.3	28.....	73	.6	13	24	.3	.....
14.....	28	24	28	13	.6	1.3	29.....	73	.6	13	13	.6	.....
15.....	38	24	28	7.0	.6	1.3	30.....	73	.6	13	1.3	.6	.....
							31.....	73	.....	145	.....	1.3	.....

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Day.	Mar.	Apr.	May.	June.	July.	Aug.
1906.							1906.						
1.....	57	224	20	725	32	.....	16.....	44	41	11	286	19	.....
2.....	57	205	19	526	30	.....	17.....	44	38	11	154	19	.....
3.....	55	170	18	438	25	.....	18.....	63	35	11	125	19	.....
4.....	57	154	15	526	24	.....	19.....	55	32	11	100	19	.....
5.....	59	139	14	585	24	.....	20.....	52	30	11	90	19	.....
6.....	55	125	14	472	24	.....	21.....	48	30	11	81	19	.....
7.....	57	112	14	390	24	.....	22.....	98	30	11	63	.....	.....
8.....	65	100	14	309	22	.....	23.....	162	30	11	55	.....	.....
9.....	76	90	13	265	20	.....	24.....	139	30	11	48	.....	.....
10.....	81	81	12	286	20	.....	25.....	154	30	12	44	.....	.....
11.....	81	72	12	224	22	.....	26.....	625	30	12	38	.....	.....
12.....	76	63	11	187	22	.....	27.....	265	25	14	35	.....	.....
13.....	81	55	11	187	22	.....	28.....	286	25	13	35	.....	.....
14.....	81	48	11	162	20	.....	29.....	205	22	12	35	.....	.....
15.....	76	44	10	139	19	.....	30.....	154	22	1,640	32	.....	.....
							31.....	154	.....	1,360	.....	.....	.....

NOTE.—Daily discharge for 1905 determined from rating curves well defined between 2 and 200 second-feet; for 1906 from fairly well defined rating curves.

Monthly discharge of Willow Creek near Arlington, Oreg., for 1905-6.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
March.....	87	28	50.0	3,070	C.
April.....	103	.6	38.1	2,270	C.
May.....	145	.3	12.3	756	C.
June.....	488	.3	45.5	2,710	C.
July.....	1.3	.3	.67	41	C.
Aug. 1-20.....	3.8	.3	1.24	49	C.
The period.....				8,900	
1906.					
March.....	625	44	115	7,070	C.
April.....	224	22	71.1	4,230	C.
May.....	1,640	10	109	6,700	C.
June.....	725	32	221	13,200	C.
July 1-21.....	32	19	22.1	920	C.
The period.....				32,100	

JOHN DAY RIVER BASIN.

GENERAL FEATURES.

John Day River drains the country to the northwest of the Blue Mountains. The river rises on the divide between Grant and Baker counties, Oreg., flows westward and then northward, and joins Columbia River about 28 miles above The Dalles. Its principal tributaries are North, Middle, and South forks. Its total drainage area is 7,800 square miles.

The general elevation of its headwaters is about 6,000 feet above sea level; at Fossil the elevation is 1,500 feet. The headwater region of the stream is forested. Except wheat, which is grown on the rolling uplands by the "dry farming" process, no agricultural products of consequence can be raised without irrigation, and as only the immediate valleys of the streams can be readily irrigated, comparatively little has been accomplished. A number of projects are, however, contemplated, under which, by means of storage reservoirs and high-line canals, enormous areas of very productive table-lands would be utilized. The storage facilities are ample for this purpose. It is not likely that extensive development will be undertaken until more detailed studies of flow have been made.

The mean annual rainfall ranges from 24 inches on the headwaters to 10 inches at the mouth. The winters are cold, and the streams are frequently icebound throughout the greater part of the winter.

JOHN DAY RIVER NEAR DAYVILLE; OREG.

Location.—In sec. 4, T. 13 S., R. 27 E., at a private wagon bridge about 3 miles above Dayville and the mouth of South Fork.

Records presented.—November 23, 1908, to September 30, 1910.

Drainage area.—1,000 square miles.

Gage.—Vertical staff.

Channel.—Sand and gravel; probably slightly shifting; banks low below bridge and river overflows at about gage height 3 feet.

Discharge measurements.—Made from the down rail of private wagon bridge, to which gage is attached, or, at low water, by wading.

Winter flow.—Affected by ice for short periods.

Diversion.—Many private ditches take water from river above station; quantity diverted unknown.

Accuracy.—Results good.

Discharge measurements of John Day River near Dayville, Oreg., 1908-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 23	R. B. Post.....	0.55	154	Mar. 23	L. R. Allen.....	5.03	2,080
				23	.....do.....	4.72	1,720
1909.				24	.....do.....	4.40	1,510
Mar. 7	.....do.....	1.34	327	June 7	.....do.....	.40	147
July 18	.....do.....	.18	83.4	Oct. 25	R. W. Davenport.....	.18	105

Daily gage height, in feet, of John Day River near Dayville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.			0.4	0.4	0.9	1.3	2.0	1.6	2.6	1.1	0.1	-0.4
2.			.42	.4	.95	1.3	2.1	1.6	2.7	1.0	.0	-.3
3.			.42	.42	.95	1.3	2.5	1.8	3.0	.9	.0	-.3
4.			.5	.56	1.0	1.45	2.3	1.9	3.5	.5	.0	.0
5.			.5	.5	1.0	1.5	2.0	2.1	3.2	.4	.0	.0
6.			.42	.5	1.0	1.5	1.9	2.0	3.0	.4	.0	.0
7.			.42	.5	.9	1.4	1.9	1.9	2.5	.4	.0	.0
8.			.42	.5	.9	1.4	1.8	1.9	2.5	.5	.0	.0
9.			.42	.5	.85	1.45	1.7	1.9	2.5	.8	.0	-.1
10.			.42	3.0	.85	1.4	1.7	1.8	2.45	.9	-.1	.0
11.			.42	3.0	.75	1.4	1.8	1.8	2.0	.9	-.1	.0
12.			.5	3.0	.8	1.4	1.8	1.8	1.8	.9	-.1	.0
13.			.5	3.0	.9	1.35	1.85	1.8	1.9	.8	-.2	.0
14.			.5	3.0	1.0	1.35	2.0	1.8	1.9	.8	-.2	.0
15.			.42	3.0	1.0	1.35	2.0	1.7	1.8	.8	-.2	.0
16.			.42	3.0	1.0	1.6	2.0	1.7	2.0	.8	-.2	.0
17.			.4	2.8	3.3	1.6	2.0	1.5	1.8	.5	-.2	.0
18.				2.8	2.1	1.8	2.0	1.5	1.8	.35	-.2	.0
19.				2.1	1.9	1.95	1.95	1.5	1.8	.25	-.2	.0
20.				3.0	1.9	1.8	1.95	1.6	1.8	.2	-.3	.0
21.				2.9	1.5	1.8	1.9	1.7	1.8	.2	-.3	.0
22.			.5	2.9	1.4	1.75	1.8	1.75	1.8	.15	-.3	.0
23.			.5	2.0	1.45	1.7	1.8	1.8	1.6	.15	-.4	.0
24.		0.5	.5	1.6	1.5	1.7	1.6	1.8	1.5	.15	-.4	.0
25.		.5	.42	1.5	1.5	1.9	1.7	1.8	1.4	.0	-.5	.0
26.		.42	.42	1.45	1.45	1.95	1.7	1.8	1.3	.0	-.5	.0
27.		.4	.42	1.35	1.45	2.0	1.8	1.8	1.2	.01	-.5	.0
28.		.4	.42	1.0	1.4	2.1	1.9	2.05	1.2	.05	-.5	.0
29.		.4	.42	.8		2.05	1.9	2.9	1.2	.05	-.5	.0
30.		.4	.42	.8		2.0	1.8	2.8	1.1	.1	-.4	.1
31.			.4	.9		2.0		2.6		.1	-.4	
1909-10.												
1.	0.1	.3	1.2	.3	1.0	4.95	2.4	1.95	.75		-.9	-.5
2.	.1	.4	1.2	.3	.8	5.0	2.5	1.75	.7		-.9	-.6
3.	.0	.4	.9	.3	.6	5.05	2.35	1.55	.65		-.9	-.6
4.	.1	.4	.7	.2	.6	3.9	2.2	1.55	.6		-.9	-.7
5.	.2	.4	.6	.3	.8	4.1	2.15	1.45	.65		-1.0	-.7
6.	.2	.4	.6	.3	1.0	3.0	2.25	1.45	.55		-1.0	-.7
7.	.2	.4	.9	.3	.9	2.95	2.35	1.4	.45		-1.0	-.6
8.	.3	.4	1.0	.4	.9	2.85	2.3	1.2	.3		-1.0	-.6
9.	.3	.4	1.0	.6	.9	2.8	2.3	1.1	.3		-1.0	-.5
10.	.3	.4	1.0	.6	.9	2.75	2.8	1.4	.2		-1.0	-.5
11.	.3	.5	1.0	.6	.9	2.9	2.85	1.5	.3		-.8	-.5
12.	.2	.5	1.0	.7	1.0	3.1	2.75	1.45	.2		-.7	-.5
13.	.2	.5	1.1	.7	1.35	3.35	2.55	1.4	.1		-.7	-.45
14.	.2	.5	1.1	.7	1.8	3.45	2.45	1.4	.1		-.7	-.35
15.	.2	.4	1.1	.6	1.1	3.55	2.35	1.45			-.7	-.3
16.	.2	.4	1.0	.5	.8	3.55	2.5	1.25			-.6	-.2
17.	.2	.3	.9	.5	.95	3.75	2.25	1.2			-.5	-.1
18.	.3	.3	.9	.5	1.0	3.8	2.15	1.15			-.5	-.1
19.	.3	.4	.9	.5	.9	4.4	2.25	1.05			-.5	-.1
20.	.3	.4	.8	.5	.8	6.15	2.5	.95			-.4	-.1
21.	.3	.9	.8	.6	.95	5.35	2.55	1.0			-.5	-.1
22.	.3	1.0	.5	1.5	.95	4.8	2.4	.85	.1		-.5	-.1
23.	.3	2.3	.4	3.0	.9	4.9	2.4	.85	.15		-.4	-.1
24.	.3	2.7	.4	3.8	1.7	4.2	2.35	.85	.15		-.4	-.1
25.	.3	1.8	.4	1.7	2.55	3.75	2.45	.75	.1		-.4	-.1
26.	.3	1.6	.4	1.4	2.0	3.5	2.45	.9	.15		-.4	-.1
27.	.3	1.2	.3	1.2	1.55	3.2	2.45	.95			-.4	-.1
28.	.3	1.2	.3	1.2	3.95	2.85	2.4	1.0		.6	-.4	-.1
29.	.3	1.3	.3	1.1		2.7	2.25	.85		.7	-.4	-.2
30.	.3	1.2	.3	1.0		2.45	2.1	.85		.7	-.4	-.2
31.	.3		.3	1.7		2.4		.85		.7	-.4	

NOTE.—A little floating ice was reported occasionally during 1910, but discharge relation was not affected.

Daily discharge, in second-feet, of John Day River near Dayville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1			124	124	224	316	500	392	682	268	72	15
2			128	124	235	316	528	392	718	246	58	23
3			128	128	235	316	650	444	830	224	58	23
4			142	154	246	353	588	472	1,040	142	58	58
5			142	142	246	366	500	528	910	124	58	58
6			128	142	246	366	472	500	830	124	58	58
7			128	142	224	340	472	472	650	124	58	58
8			128	142	224	340	444	472	650	142	58	58
9			128	142	213	353	418	472	650	202	58	45
10			128	142	213	340	418	444	634	224	45	58
11			128	142	192	340	444	444	500	224	45	58
12			142	142	202	340	444	444	444	224	45	58
13			142	142	224	328	458	444	472	202	33	58
14			142	300	246	328	500	444	472	202	33	58
15			128	450	246	328	500	418	444	202	33	58
16			128	600	246	392	500	418	500	202	33	58
17			124	754	950	392	500	366	444	142	33	58
18			128	754	528	444	500	366	444	115	33	58
19			131	528	472	486	486	366	444	97	33	58
20			135	830	472	444	486	392	444	88	23	58
21			138	790	366	444	472	418	444	88	23	58
22			142	790	340	431	444	431	444	80	23	58
23			142	500	353	418	444	444	392	80	15	58
24		142	142	392	366	418	392	444	366	80	15	58
25		142	128	366	366	472	418	444	340	58	9	58
26		128	128	353	353	486	418	444	316	58	9	58
27		124	128	328	353	500	444	444	292	59	9	58
28		124	128	246	340	528	472	514	292	65	9	58
29		124	128	202	.....	514	472	790	292	65	9	58
30		124	128	202	.....	500	444	754	268	72	15	72
31		.....	124	224	.....	500	.....	682	.....	72	15	.....
1909-10.												
1	72	106	292	106	246	1,920	648	518	219	60	5	22
2	72	124	292	106	202	1,950	678	465	208	60	5	16
3	58	124	224	106	162	1,980	633	413	197	60	5	16
4	72	124	182	88	162	1,240	588	413	186	60	5	11
5	88	124	162	106	202	1,360	574	387	197	60	3	11
6	88	124	162	106	246	830	603	387	176	50	3	11
7	88	124	224	106	224	810	633	374	156	50	3	16
8	106	124	246	124	224	772	618	326	128	50	3	16
9	106	124	246	162	224	754	618	302	128	50	3	22
10	106	124	246	162	224	736	772	374	110	50	3	22
11	106	142	246	162	224	790	788	400	128	40	7	22
12	88	142	246	182	246	870	756	387	110	40	11	22
13	88	142	268	182	328	972	693	374	92	40	11	26
14	88	142	268	182	444	1,020	663	374	92	40	11	35
15	88	124	268	162	268	1,060	633	387	75	40	11	40
16	88	124	246	142	202	1,060	618	338	75	30	16	50
17	88	106	224	142	235	1,160	603	326	70	30	22	62
18	106	106	224	142	246	1,190	574	314	70	30	22	62
19	106	124	224	142	224	1,540	603	290	70	30	22	62
20	106	124	202	142	202	2,940	678	266	70	30	30	62
21	106	224	202	162	235	2,220	693	278	75	20	22	62
22	106	246	142	366	235	1,810	648	242	92	20	22	62
23	106	588	124	830	224	1,880	648	242	101	20	30	62
24	106	718	124	1,190	418	1,420	633	242	101	20	30	62
25	106	444	124	418	666	1,160	663	219	92	20	30	62
26	106	392	124	340	500	1,040	663	254	101	16	30	62
27	106	292	106	292	379	912	663	266	75	16	30	62
28	106	292	106	292	1,270	788	648	278	70	16	30	62
29	106	316	106	268	.....	740	603	242	70	11	30	50
30	106	292	106	246	.....	663	560	242	70	11	30	50
31	106	.....	106	418	.....	648	.....	242	.....	11	30	.....

NOTE.—Daily discharge determined from rating curves applicable as follows:

Nov 24, 1908, to Mar. 20, 1910, well defined between 80 and 400 second-feet.

Mar. 21 to Dec. 31, 1910, well defined between 80 and 400 second-feet.

Jan. 10 to 18, 1909, interpolated on account of ice.

Monthly discharge of John Day River near Dayville, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
November 24-30.....	142	124	130	1,800	A.
December.....	142	124	132	8,120	B.
January.....	830	124	337	20,700	C.
February.....	950	192	311	17,300	B.
March.....	528	316	401	24,700	A.
April.....	650	392	458	27,300	A.
May.....	790	366	468	28,800	A.
June.....	1,040	268	522	31,100	A.
July.....	268	58	139	8,550	A.
August.....	72	9	34.7	2,130	C.
September.....	72	15	54.3	3,230	C.
The period.....				174,000	
1909-10.					
October.....	106	58	95.9	5,900	A.
November.....	718	106	210	12,500	A.
December.....	292	106	196	12,100	B.
January.....	1,190	88	241	14,800	B.
February.....	1,270	162	309	17,200	B.
March.....	2,940	648	1,230	75,600	B.
April.....	788	560	647	38,500	B.
May.....	518	219	328	20,200	A.
June.....	219	70	113	6,720	B.
July.....	63	11	34.9	2,150	C.
August.....	30	3	16.6	1,020	C.
September.....	62	11	40.1	2,390	C.
The year.....	2,940	3	288	209,000	

JOHN DAY RIVER AT McDONALD, OREG.

Location.—In sec. 11, T. 1 N., R. 19 E., at McDonald, 18 miles southwest of Arlington, half a mile below mouth of Rock Creek, 16 miles above junction with Columbia River.

Records presented.—November 14, 1904, to September 30, 1910.

Drainage area.—7,800 square miles.

Gage.—Inclined staff in two sections on left bank, 183 feet above ferry cable; upper section graduated from 2 to 11 feet, lower section 1 to 2 feet.

Channel.—Clean gravel and sand; shifts slightly; banks high; one channel at all stages.

Discharge measurements.—Made from cable.

Winter flow.—Affected by ice for short periods.

Diversions.—Large part of natural low-water flow of stream diverted in the upper John Day Valley for irrigation.

Accuracy.—Results good.

Discharge measurements of John Day River at McDonald, Oreg., in 1904-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Oct. 26	W. C. Sawyer.....	2.00	580	Feb. 6	F. C. Dillard.....	2.35	866
Dec. 16	do.....	1.98	570	Feb. 23	R. S. Hall.....	3.88	2,990
1905.				Mar. 15	do.....	3.10	1,710
Feb. 24	W. C. Sawyer.....	3.20	1,970	Apr. 2	F. C. Dillard.....	6.70	10,500
Mar. 17	do.....	3.66	2,650	May 2	J. C. Stevens.....	5.50	6,840
25	J. H. Lewis.....	4.10	3,500	June 8	R. S. Hall.....	4.70	4,760
Apr. 8	do.....	4.28	3,800	July 6	do.....	6.16	8,670
May 10	W. C. Sawyer.....	4.70	5,010	Nov. 23	H. McGlashan.....	2.69	1,240
11	do.....	4.68	4,850			1.97	495
June 1	do.....	3.58	2,480	1908.			
Aug. 16	do.....	1.25	107	Nov. 24	L. R. Allen.....	1.87	427
17	do.....	1.25	109	1910.			
Oct. 23	Sawyer and Hall.....	1.75	350	Mar. 11 ^a	L. R. Allen.....	5.64	7,830
24	W. C. Sawyer.....	1.73	336				

^a Made without sufficient weight.

Daily gage height, in feet, of John Day River at McDonald, Oreg., for 1904-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.			1.95	2.50	2.80	3.45	3.80	3.90	3.55	2.50	1.35	1.20
2.			1.95	2.85	2.70	3.50	3.75	4.05	3.55	2.37	1.35	1.20
3.			1.95	2.50	2.60	3.53	3.92	4.00	3.55	2.30	1.30	1.20
4.			1.95	2.30	2.55	3.70	4.15	4.20	3.57	2.23	1.35	1.20
5.			1.95	2.30	2.45	3.80	4.10	4.55	3.65	2.20	1.40	1.20
6.			1.90	2.25	2.45	3.80	4.08	4.55	3.53	2.10	1.35	1.20
7.			1.80	2.20	2.40	3.75	4.15	4.50	3.45	2.02	1.35	1.20
8.			1.70	2.00	2.30	3.70	4.30	4.45	3.37	2.00	1.35	1.20
9.			1.70	1.90	2.40	3.60	4.35	4.43	3.30	1.93	1.35	1.20
10.			1.80	1.95	2.30	3.52	4.45	4.77	3.20	1.90	1.30	1.20
11.			1.90	1.80	2.30	3.48	4.40	4.63	3.20	1.80	1.30	1.20
12.			1.95	1.80	2.20	3.50	4.20	4.52	3.15	1.75	1.30	1.25
13.			2.01	1.70	2.10	3.50	4.02	4.30	3.12	1.70	1.25	1.25
14.		1.70	2.00	1.70	1.90	3.52	3.92	4.15	3.13	1.67	1.25	1.48
15.		1.70	2.00	1.80	1.70	3.63	3.80	4.05	3.02	1.65	1.25	1.65
16.		1.70	1.95	1.80	1.80	3.70	3.70	3.97	2.90	1.63	1.20	1.40
17.		1.80	2.00	2.10	1.90	3.65	3.75	3.90	2.83	1.60	1.20	1.35
18.		1.80	2.00	2.60	2.10	3.72	3.75	3.95	2.78	1.60	1.20	1.30
19.		1.90	1.95	2.60	2.25	4.03	3.70	4.08	2.75	1.60	1.20	1.30
20.		1.90	1.90	2.50	2.80	4.00	3.70	3.97	2.75	1.55	1.20	1.30
21.		1.90	1.95	2.40	2.60	3.90	3.80	3.85	2.62	1.55	1.20	1.30
22.		1.90	2.00	2.50	3.10	4.20	3.93	3.80	2.53	1.50	1.20	1.30
23.		1.90	2.00	2.40	3.30	4.30	3.92	3.75	2.45	1.47	1.20	1.30
24.		1.95	2.00	2.60	3.20	4.07	3.88	3.67	2.65	1.45	1.20	1.30
25.		1.95	2.00	3.50	3.30	4.00	3.85	3.60	2.57	1.42	1.20	1.30
26.		1.95	2.00	3.50	3.25	4.08	3.90	3.50	2.50	1.40	1.20	1.35
27.		1.95	1.85	3.40	3.37	4.00	4.00	3.40	2.68	1.40	1.20	1.35
28.		1.95	1.80	3.20	3.50	4.27	4.45	3.35	2.60	1.37	1.20	1.40
29.		1.95	1.65	3.30	-----	4.10	4.17	3.43	2.60	1.35	1.20	1.40
30.		1.95	1.85	3.20	-----	3.95	3.98	3.40	2.50	1.35	1.20	1.50
31.		-----	1.90	3.30	-----	3.88	-----	4.05	-----	1.35	1.20	-----
1905-6.												
1.	1.50	1.85	1.90	1.80	2.40	3.80	7.50	4.70	6.98	3.22	1.55	1.45
2.	1.52	1.80	1.85	1.90	2.52	3.55	6.72	4.68	6.48	3.08	1.55	1.45
3.	1.60	1.80	1.80	1.85	2.58	3.25	6.05	4.62	6.20	2.98	1.55	1.40
4.	1.60	1.70	1.80	1.78	2.42	3.15	5.45	4.58	6.10	2.88	1.50	1.40
5.	1.60	1.70	1.80	1.80	2.42	3.10	5.35	4.52	6.78	2.78	1.50	1.40
6.	1.55	1.70	1.95	1.85	2.35	3.10	5.45	4.55	6.82	2.68	1.50	1.40
7.	1.65	1.75	1.90	1.88	2.35	3.05	5.60	4.35	6.55	2.60	1.50	1.40
8.	1.60	1.75	1.85	1.90	2.30	3.15	6.00	4.15	6.15	2.50	1.50	1.40
9.	1.55	1.75	1.80	1.85	2.20	3.75	5.92	4.05	5.80	2.48	1.45	1.40
10.	1.55	1.75	1.80	1.90	2.15	4.15	5.90	3.98	5.70	2.42	1.45	1.35
11.	1.60	1.70	1.75	1.90	2.20	4.50	5.85	3.92	5.45	2.42	1.45	1.35
12.	1.62	1.70	1.65	1.90	2.18	4.25	5.55	3.98	5.25	2.32	1.45	1.40
13.	1.65	1.75	1.60	1.88	2.12	4.75	5.25	3.98	5.05	2.28	1.45	1.40
14.	1.65	1.75	1.70	1.90	2.12	3.40	5.05	4.00	4.95	2.20	1.40	1.45
15.	1.65	1.75	1.65	1.90	2.20	3.15	5.00	3.80	4.72	2.12	1.82	1.45
16.	1.65	1.75	1.60	2.00	2.20	3.10	5.12	3.70	4.55	2.05	1.88	1.45
17.	1.65	1.70	1.70	2.00	2.20	3.00	5.35	3.80	4.60	2.00	1.70	1.52
18.	1.70	1.70	1.85	2.10	2.28	2.90	5.60	3.65	4.72	2.00	1.65	1.65
19.	1.70	1.70	1.85	2.30	2.30	2.95	5.35	3.50	4.50	1.92	1.60	1.75
20.	1.70	1.70	1.90	2.18	3.35	3.00	5.12	3.40	4.15	1.90	1.60	1.75
21.	1.75	1.70	1.90	2.10	3.88	3.00	5.10	3.28	4.00	1.90	1.50	1.70
22.	1.80	1.80	1.88	2.05	3.70	3.00	5.25	3.25	3.88	1.85	1.50	1.70
23.	1.75	1.80	1.85	2.00	3.85	3.35	5.60	3.30	3.78	1.80	1.50	1.70
24.	1.75	1.80	1.85	2.25	3.50	4.55	5.60	3.40	3.60	1.80	1.45	1.65
25.	1.75	1.80	1.68	2.60	3.25	5.05	5.50	3.40	3.50	1.75	1.45	1.60
26.	1.75	1.70	1.65	2.95	3.20	6.55	5.35	3.30	3.40	1.70	1.45	1.60
27.	1.75	1.65	1.75	2.92	3.10	6.40	5.22	3.40	3.45	1.70	1.45	1.60
28.	1.80	1.60	1.88	2.80	3.10	6.55	5.00	3.40	3.30	1.65	1.48	1.60
29.	1.85	1.70	1.90	2.58	-----	6.30	4.85	3.50	3.35	1.60	1.50	1.60
30.	1.90	1.90	1.85	2.50	-----	6.10	4.72	3.50	3.40	1.60	1.50	1.60
31.	1.90	-----	1.80	2.42	-----	6.50	-----	7.85	-----	1.60	1.50	-----

Daily gage height, in feet, of John Day River at McDonald, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1	1.58	1.75	1.70	3.10	5.65	5.25	4.60	5.20	4.15	3.00	1.85	1.50
2	1.55	1.75	1.80	3.00	5.70	5.05	4.60	5.10	4.25	2.90	1.90	1.50
3	1.55	1.75	1.80	2.75	4.55	4.95	4.85	5.00	4.35	2.82	1.83	1.50
4	1.55	1.75	1.85	2.90	4.10	4.60	5.00	5.05	4.25	2.75	1.80	1.58
5	1.55	1.75	1.85	3.32	7.08	4.50	5.00	5.10	4.05	2.65	1.80	1.62
6	1.55	1.75	1.92	4.60	10.38	4.25	5.30	5.10	4.00	2.70	1.75	1.60
7	1.55	1.72	1.95	3.75	8.30	4.30	5.10	5.10	4.00	2.68	1.70	1.70
8	1.55	1.82	2.00	3.25	7.18	4.35	5.85	5.10	4.00	2.60	1.70	1.60
9	1.60	1.85	2.00	2.95	6.50	4.50	6.48	5.10	3.85	2.48	1.70	1.60
10	1.60	1.85	2.10	2.60	6.15	4.50	6.70	5.10	3.70	2.40	1.70	1.60
11	1.60	1.85	2.20	2.60	6.05	4.55	6.90	5.15	3.60	2.35	1.70	1.60
12	1.60	1.92	2.20	2.70	5.65	4.60	6.85	5.35	3.50	2.30	1.70	1.55
13	1.60	2.00	2.15	2.50	5.45	4.50	6.80	5.25	3.85	2.28	1.70	1.50
14	1.60	1.95	2.18	2.30	5.30	4.40	7.15	5.15	3.95	2.20	1.70	1.50
15	1.60	2.00	2.28	2.12	5.20	4.30	7.50	4.85	3.85	2.18	1.70	1.50
16	1.60	1.95	2.20	2.10	5.15	4.20	7.50	4.70	3.75	2.15	1.70	1.50
17	1.60	2.00	2.15	1.95	5.15	4.10	7.25	4.75	3.65	2.10	1.70	1.50
18	1.60	2.40	2.10	1.85	5.15	4.10	7.85	5.05	3.50	2.22	1.65	1.50
19	1.65	2.30	2.00	2.00	5.10	5.55	6.55	5.25	3.45	2.15	1.60	1.50
20	1.65	2.22	2.10	2.35	5.00	8.50	6.50	5.25	3.35	2.10	1.60	1.50
21	1.70	2.20	2.10	2.70	5.55	8.80	6.25	5.50	3.20	2.05	1.55	1.50
22	1.70	2.10	2.20	2.90	5.50	8.20	6.00	5.25	3.25	2.02	1.55	1.55
23	1.70	2.00	2.25	2.70	5.50	7.15	5.95	4.95	3.35	2.00	1.55	1.55
24	1.70	2.00	2.55	2.60	5.50	6.50	6.05	4.75	3.40	2.00	1.50	1.55
25	1.75	2.10	2.68	2.65	5.40	6.05	6.10	4.55	3.35	2.00	1.95	1.55
26	1.75	2.00	2.75	2.70	5.75	5.85	5.95	4.45	3.28	1.92	2.30	1.55
27	1.75	1.95	3.60	2.55	5.85	5.50	5.80	4.30	3.15	1.92	1.58	1.55
28	1.75	1.90	4.10	2.40	5.55	5.20	5.70	4.25	3.10	1.90	1.50	1.55
29	1.75	1.95	3.75	2.55	.....	5.00	5.55	4.20	3.00	1.85	1.50	1.55
30	1.75	1.90	3.45	2.50	.....	4.80	5.35	4.15	3.00	1.85	1.50	1.55
31	1.75	.....	3.25	5.20	.....	4.70	.....	4.10	.....	1.85	1.50	.....
1907-8.												
1	1.55	1.75	2.00	2.60	2.20	2.70	3.50	4.10	3.48	2.62	1.55	1.35
2	1.55	1.75	2.00	2.50	2.05	2.65	3.45	4.20	3.38	2.60	1.55	1.35
3	1.65	1.82	2.00	2.50	1.95	2.52	3.35	4.30	3.30	2.58	1.55	1.35
4	1.72	1.85	1.95	2.50	1.95	2.52	3.20	4.40	3.20	2.50	1.50	1.35
5	1.70	1.85	1.95	2.50	2.10	2.50	3.30	4.20	3.20	2.50	1.50	1.40
6	1.75	1.85	1.90	2.40	2.20	2.42	3.50	4.00	3.25	2.45	1.45	1.40
7	1.72	1.85	1.90	2.40	2.30	2.40	3.60	3.90	3.18	2.40	1.40	1.40
8	1.70	1.85	1.90	2.35	2.30	2.40	3.55	3.90	3.10	2.30	1.40	1.40
9	1.70	1.85	1.90	2.30	2.30	2.38	3.45	4.10	3.20	2.28	1.40	1.35
10	1.70	1.80	1.90	2.25	2.30	2.35	3.45	4.00	3.30	2.20	1.40	1.35
11	1.70	1.80	1.98	2.30	2.22	2.30	3.65	3.85	3.55	2.18	1.35	1.35
12	1.70	1.80	2.00	2.30	2.20	2.32	4.00	3.70	3.60	2.10	1.35	1.30
13	1.70	1.80	2.00	2.42	2.20	2.50	4.35	3.62	3.70	2.02	1.35	1.30
14	1.70	1.80	2.00	2.38	2.20	2.68	4.85	3.50	3.70	2.65	1.40	1.30
15	1.70	1.80	2.00	2.40	2.20	3.10	5.05	3.50	3.65	2.30	1.40	1.35
16	1.70	1.80	2.00	2.40	2.10	4.90	5.15	3.35	3.60	2.02	1.35	1.40
17	1.70	1.80	2.00	2.50	2.10	7.15	5.40	3.45	3.60	2.00	1.35	1.40
18	1.70	1.80	2.00	2.45	2.10	6.70	5.55	3.45	3.52	2.10	1.35	1.35
19	1.70	1.90	1.90	2.40	2.18	5.65	5.30	3.35	3.45	2.05	1.35	1.35
20	1.70	1.90	1.90	2.40	2.20	5.00	5.30	3.30	3.38	2.05	1.40	1.40
21	1.70	1.90	1.80	2.35	2.20	4.50	5.65	3.35	3.20	1.90	1.65	1.45
22	1.70	1.85	1.80	2.55	2.18	4.25	5.75	3.65	3.10	1.90	1.45	1.55
23	1.70	1.85	1.90	2.70	2.15	4.00	5.60	3.70	3.10	1.90	1.55	1.70
24	1.70	1.85	2.00	2.50	2.10	3.95	5.50	3.70	3.10	1.80	1.50	1.70
25	1.70	1.90	2.30	2.35	2.10	3.90	5.25	3.60	2.98	1.80	1.48	1.60
26	1.70	1.90	3.10	2.25	2.15	3.90	4.95	3.60	8.82	1.80	1.50	1.60
27	1.75	2.00	3.40	2.32	2.20	4.10	4.70	3.70	2.80	1.75	1.45	1.55
28	1.75	2.00	3.90	2.30	2.30	3.95	4.48	3.70	2.80	1.70	1.40	1.55
29	1.75	2.08	3.25	2.30	2.50	3.75	4.35	3.55	2.80	1.70	1.40	1.55
30	1.75	2.10	2.95	2.20	.....	3.65	4.22	3.50	2.70	1.65	1.40	1.55
31	1.75	.....	2.75	2.15	.....	3.45	.....	3.50	.....	1.60	1.35	.....

Daily gage height, in feet, of John Day River at McDonald, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	1.6	1.85	1.7	1.85	2.3	2.9	4.1	4.1	4.3	2.4	1.6	1.2
2	1.6	1.85	1.7	1.75	2.3	3.0	4.1	3.9	4.35	2.3	1.7	1.2
3	1.6	1.9	1.62	1.82	2.3	3.25	4.3	3.9	4.75	2.2	1.62	1.2
4	1.6	2.05	1.72	1.85	2.3	3.45	4.5	4.0	4.9	2.2	1.60	1.2
5	1.6	2.0	1.8	1.9	2.3	3.45	4.5	4.35	4.75	2.1	1.55	1.25
6	1.6	2.0	1.9	1.9	2.3	3.65	4.2	4.75	4.6	2.0	1.5	1.32
7	1.6	1.9	1.9	1.8	2.22	3.45	4.0	4.55	4.45	2.0	1.5	1.3
8	1.6	1.9	1.9	2.55	2.2	3.3	3.8	4.35	4.25	2.0	1.45	1.75
9	1.6	1.9	1.9	2.3	2.2	3.15	3.6	4.25	4.0	2.0	1.45	1.52
10	1.6	1.85	1.85	2.05	2.2	3.1	3.55	4.1	3.85	2.0	1.4	1.5
11	1.65	1.85	1.85	1.9	2.2	3.1	3.65	4.1	3.75	2.35	1.4	1.5
12	1.65	1.85	1.85	1.85	2.2	3.0	4.0	4.1	3.55	2.1	1.4	1.5
13	1.65	1.85	1.85	1.85	2.2	2.9	3.8	4.0	3.45	2.05	1.4	1.5
14	1.65	1.85	1.8	2.1	2.1	2.85	3.8	3.9	3.4	2.05	1.35	1.45
15	1.68	1.8	1.8	2.0	2.15	2.95	4.1	3.9	3.5	2.0	1.35	1.45
16	1.7	1.8	1.8	2.0	2.35	3.15	4.3	3.8	3.4	1.9	1.3	1.45
17	1.7	1.8	1.8	2.1	2.05	3.5	4.3	3.8	3.4	1.8	1.3	1.48
18	1.9	1.8	1.8	6.05	4.05	3.9	4.4	3.8	3.5	1.8	1.3	1.5
19	2.1	1.8	2.0	5.15	4.2	4.1	4.35	3.8	3.3	1.8	1.3	1.45
20	2.0	1.8	1.9	4.2	3.85	3.75	4.1	3.7	3.35	1.75	1.3	1.45
21	1.9	1.8	1.9	5.2	3.55	3.6	4.1	3.68	3.3	1.7	1.3	1.45
22	1.9	1.85	1.7	4.75	3.2	3.5	4.1	3.7	3.2	1.7	1.3	1.4
23	1.9	1.85	1.75	4.45	3.05	3.38	3.9	3.7	3.1	1.7	1.25	1.4
24	1.9	1.85	1.75	3.65	2.9	3.3	3.8	3.6	2.95	1.7	1.25	1.4
25	1.9	1.85	1.8	3.2	2.9	3.4	3.9	3.5	2.8	1.6	1.25	1.4
26	1.85	1.9	1.8	2.9	2.9	3.7	3.7	3.4	2.7	1.6	1.25	1.4
27	1.8	1.95	1.8	2.7	3.0	3.95	3.8	3.5	2.7	1.55	1.25	1.45
28	1.8	1.9	1.8	2.7	2.9	4.25	4.05	3.7	2.6	1.58	1.2	1.5
29	1.82	1.9	1.82	2.5	2.4	4.4	4.45	4.25	2.5	1.5	1.2	1.5
30	1.85	1.85	1.85	2.5	2.4	4.4	4.35	4.65	2.5	1.5	1.2	1.5
31	1.85	1.85	1.9	2.25	2.25	4.3	4.35	4.45	2.5	1.55	1.2	1.5
1909-10.												
1	1.5	1.6	2.9	2.55	3.2	5.6	4.8	4.25	2.6	1.7	1.1	1.05
2	1.5	1.65	3.2	2.25	3.55	7.1	4.8	4.1	2.55	1.65	1.1	1.05
3	1.45	1.7	3.1	2.45	3.05	7.8	4.9	4.0	2.5	1.6	1.1	1.05
4	1.45	1.7	3.88	2.55	2.95	7.5	4.9	3.9	2.4	1.6	1.1	1.05
5	1.52	1.7	2.6	2.5	2.75	7.1	4.7	3.8	2.4	1.6	1.1	1.05
6	1.55	1.7	2.45	2.25	2.7	7.25	4.5	3.8	2.25	1.55	1.1	1.05
7	1.55	1.75	2.18	2.3	2.85	6.25	4.5	3.7	2.2	1.55	1.1	1.05
8	1.55	1.8	2.4	2.5	2.95	5.0	4.9	3.5	2.1	1.5	1.05	1.05
9	1.55	1.8	2.5	2.5	2.85	4.85	4.9	3.5	2.1	1.5	1.05	1.05
10	1.55	1.8	2.65	2.55	2.7	5.7	5.1	3.5	2.0	1.5	1.05	1.05
11	1.55	1.8	2.95	2.65	2.6	5.75	5.45	3.8	2.0	1.45	1.05	1.05
12	1.58	1.8	2.95	2.6	2.6	5.8	5.55	4.0	2.1	1.4	1.05	1.1
13	1.6	1.8	3.3	2.6	2.7	6.0	5.5	3.95	2.1	1.4	1.05	1.1
14	1.60	1.8	3.0	2.6	2.9	6.15	5.4	3.75	2.0	1.35	1.05	1.1
15	1.55	1.8	3.3	2.7	2.95	6.3	5.25	3.65	1.95	1.35	1.05	1.1
16	1.55	1.8	2.95	2.7	3.45	6.4	4.95	3.5	1.95	1.3	1.05	1.1
17	1.55	1.8	2.95	2.7	3.0	6.5	4.8	3.4	1.9	1.3	1.05	1.1
18	1.55	1.8	2.5	2.95	2.7	6.5	4.7	3.3	1.9	1.3	1.05	1.1
19	1.55	1.68	2.5	2.9	2.7	6.6	4.7	3.2	1.9	1.3	1.05	1.1
20	1.55	1.68	2.5	2.4	2.65	6.8	4.85	3.1	1.9	1.25	1.05	1.2
21	1.55	1.6	2.5	2.2	2.65	7.8	5.15	3.0	1.9	1.25	1.05	1.3
22	1.55	1.92	2.4	3.95	2.65	7.7	5.25	3.0	1.9	1.25	1.05	1.4
23	1.55	2.45	2.4	3.9	2.7	7.2	5.0	2.9	1.85	1.25	1.05	1.4
24	1.6	5.05	2.25	4.55	2.6	7.75	4.85	2.8	1.85	1.2	1.05	1.4
25	1.6	5.4	1.95	5.25	4.6	6.8	4.8	2.95	1.8	1.2	1.05	1.35
26	1.6	4.35	2.15	4.3	5.1	6.25	4.9	2.7	1.8	1.2	1.05	1.35
27	1.6	3.75	2.25	3.5	4.65	5.95	4.9	2.7	1.8	1.15	1.05	1.35
28	1.6	3.35	2.45	3.3	4.2	5.6	4.9	2.75	1.75	1.15	1.05	1.35
29	1.6	3.05	2.45	3.2	3.9	5.3	4.7	2.7	1.7	1.15	1.05	1.35
30	1.6	2.82	2.45	3.1	3.7	5.1	4.5	2.7	1.7	1.15	1.05	1.35
31	1.6	2.45	2.45	3.0	3.5	4.9	4.3	2.7	1.7	1.15	1.05	1.35

NOTE.—Ice present Jan. 1-31, 1907; Jan. 7-21, 1909, and part of February, 1910. Lower section of gage carried away by ice Jan. 17, 1909; new section put in place Jan. 24; readings during intervening period obtained by measuring down to water surface from upper section of gage.

Daily discharge, in second-feet, of John Day River at McDonald, Oreg., for 1904-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1			516	1,070	1,420	2,300	2,890	3,080	2,460	1,070	149	88
2			516	1,480	1,300	2,380	2,800	3,380	2,460	926	149	88
3			516	1,070	1,180	2,420	3,120	3,280	2,460	852	128	88
4			516	852	1,130	2,710	3,590	3,700	2,490	780	149	88
5			516	852	1,010	2,890	3,490	4,530	2,620	750	170	88
6			474	800	1,010	2,890	3,440	4,530	2,420	652	149	88
7			396	750	958	2,800	3,590	4,400	2,300	578	149	88
8			326	560	852	2,710	3,920	4,280	2,180	560	149	88
9			326	474	958	2,540	4,040	4,230	2,070	499	149	88
10			396	516	852	2,410	4,280	5,130	1,930	474	128	88
11			474	396	852	2,340	4,150	4,740	1,930	396	128	88
12			516	396	750	2,380	3,700	4,450	1,860	360	128	108
13			569	326	652	2,380	3,320	3,920	1,820	326	108	108
14		326	560	326	474	2,410	3,120	3,590	1,840	307	108	206
15		326	560	396	326	2,590	2,890	3,380	1,700	295	108	295
16		326	516	396	396	2,710	2,710	3,220	1,540	283	88	170
17		396	560	652	474	2,620	2,800	3,080	1,460	266	88	149
18		396	560	1,180	652	2,750	2,800	3,180	1,400	266	88	128
19		474	516	1,180	800	3,340	2,710	3,440	1,360	266	88	128
20		474	474	1,070	1,420	3,280	2,710	3,220	1,360	239	88	128
21		474	516	958	1,180	3,080	2,890	2,990	1,220	239	88	128
22		474	560	1,070	1,800	3,700	3,140	2,890	1,100	215	88	128
23		474	560	958	2,070	3,920	3,120	2,800	1,010	201	88	128
24		516	560	1,180	1,930	3,420	3,040	2,660	1,240	192	88	128
25		516	560	2,380	2,070	3,280	2,990	2,540	1,150	179	88	128
26		516	560	2,380	2,000	3,440	3,080	2,380	1,070	170	88	149
27		516	434	2,220	2,180	3,280	3,280	2,220	1,280	170	88	149
28		516	396	1,930	2,380	3,860	4,280	2,140	1,180	157	88	170
29		516	295	2,070	-----	3,490	3,640	2,260	1,180	149	88	170
30		516	435	1,930	-----	3,180	3,340	2,220	1,070	149	88	215
31		-----	474	2,070	-----	3,040	-----	3,380	-----	149	88	-----
1905-6.												
1	215	434	474	385	910	2,870	12,700	4,780	11,000	1,920	242	200
2	225	396	434	460	1,040	2,430	10,200	4,730	9,520	1,720	242	200
3	266	396	396	422	1,100	1,960	8,290	4,600	8,710	1,590	242	180
4	266	326	396	372	931	1,820	6,650	4,500	8,430	1,460	220	180
5	266	326	396	385	931	1,760	6,390	4,370	10,400	1,340	220	180
6	239	326	516	422	860	1,750	6,650	4,440	10,500	1,220	220	180
7	295	360	474	445	860	1,680	7,050	3,980	9,730	1,120	220	180
8	266	360	434	430	810	1,820	8,150	3,540	8,570	1,020	220	180
9	239	360	396	422	715	2,780	7,930	3,340	7,590	994	200	180
10	239	360	396	460	670	3,540	7,870	3,200	7,320	931	200	162
11	266	326	360	460	715	4,320	7,730	3,090	6,650	931	200	162
12	278	326	295	460	697	3,760	6,920	3,200	6,130	830	200	180
13	295	360	266	445	643	4,900	6,130	3,200	5,620	791	200	180
14	295	360	326	460	643	2,180	5,620	3,240	5,380	715	180	200
15	295	360	295	460	715	1,820	5,500	2,870	4,830	643	400	200
16	295	360	266	540	715	1,750	5,800	2,690	4,440	582	445	200
17	295	326	326	540	715	1,620	6,390	2,870	4,550	540	320	229
18	326	326	434	625	791	1,480	7,050	2,600	4,830	540	293	293
19	326	326	434	810	810	1,550	6,390	2,340	4,520	476	265	352
20	326	326	474	697	2,110	1,620	5,800	2,180	3,540	460	265	352
21	360	326	474	625	3,010	1,620	5,750	2,020	3,240	460	220	320
22	396	396	453	582	2,690	1,620	6,130	1,900	3,010	420	220	320
23	360	396	434	540	2,960	2,110	7,050	2,040	2,830	385	220	320
24	360	396	434	762	2,340	4,440	7,050	2,180	2,520	385	200	292
25	360	396	314	1,120	1,960	5,620	6,780	2,180	2,340	352	200	265
26	360	326	295	1,550	1,890	9,730	6,390	2,040	2,180	320	200	265
27	360	295	360	1,510	1,750	9,290	6,050	2,180	2,260	320	200	265
28	396	266	458	1,360	1,750	9,730	5,500	2,180	2,040	292	212	265
29	434	326	474	1,100	-----	9,000	5,140	2,340	2,110	265	220	265
30	474	474	434	1,020	-----	8,430	4,830	2,340	2,180	265	220	265
31	474	-----	396	931	-----	9,580	-----	13,800	-----	265	220	-----

Daily discharge, in second-feet, of John Day River at McDonald, Oreg., for 1904-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.	256	352	320	1,750	7,180	6,130	4,550	6,000	3,540	1,620	422	210
2.	242	352	385	1,620	7,320	5,620	4,550	5,750	3,760	1,480	460	210
3.	242	352	385	1,300	4,440	5,380	5,140	5,500	3,980	1,380	408	210
4.	242	352	422	1,480	3,440	4,550	5,500	5,620	3,760	1,200	385	250
5.	242	352	422	2,060	11,300	4,320	5,500	5,750	3,340	1,180	385	252
6.	242	352	476	4,550	22,800	3,760	6,260	5,750	3,240	1,240	352	260
7.	242	352	500	2,780	15,300	3,870	5,750	5,750	3,240	1,220	320	320
8.	242	400	540	1,960	11,700	3,980	7,730	5,750	3,240	1,220	320	260
9.	265	422	540	1,550	9,580	4,320	9,520	5,750	2,960	994	320	260
10.	265	422	625	1,120	8,570	4,320	10,200	5,750	2,690	910	320	260
11.	265	422	715	1,120	8,290	4,440	10,800	5,880	2,520	860	320	260
12.	265	476	715	1,240	7,180	4,550	10,600	6,390	2,340	810	320	235
13.	265	540	670	1,020	6,650	4,320	10,500	6,130	2,960	890	320	210
14.	265	500	697	910	6,260	4,090	11,600	5,880	3,140	715	320	210
15.	265	540	791	643	6,060	3,870	12,700	5,140	2,960	697	320	210
16.	265	500	715	625	5,880	3,650	12,700	4,780	2,780	670	320	210
17.	265	540	670	500	5,880	3,440	11,900	4,900	2,600	625	320	210
18.	265	910	625	422	5,880	3,440	13,800	5,620	2,340	734	292	210
19.	292	810	540	540	5,750	6,920	9,730	6,130	2,260	670	260	210
20.	292	734	625	860	5,500	16,000	9,580	6,130	2,110	625	260	210
21.	320	715	625	1,240	6,920	17,100	8,860	6,780	1,890	582	235	210
22.	320	625	715	1,480	6,780	15,000	8,150	6,130	1,960	557	235	235
23.	320	540	762	1,240	6,780	11,600	8,010	5,380	2,110	540	235	235
24.	320	540	1,070	1,120	6,780	9,580	8,290	4,900	2,180	540	210	235
25.	352	625	1,220	1,180	6,520	8,290	8,430	4,440	2,110	540	500	235
26.	352	540	1,300	1,240	7,460	7,730	8,150	4,200	2,010	472	810	235
27.	352	500	2,520	1,070	7,730	6,780	7,590	3,870	1,820	472	250	235
28.	352	460	3,440	910	6,920	6,000	7,320	3,760	1,750	460	210	235
29.	352	500	2,780	1,070	5,500	6,920	3,650	1,620	422	210	235	235
30.	352	460	2,260	1,020	5,020	6,390	3,540	1,620	422	210	235	235
31.	352	1,960	6,000	4,780	3,440	3,440	3,440	422	210	210	210	235
1907-8.												
1.	235	352	540	1,120	715	1,240	2,340	3,440	2,310	1,150	235	145
2.	235	352	540	1,020	582	1,180	2,260	3,650	2,160	1,120	235	145
3.	290	400	540	1,020	500	1,040	2,110	3,870	2,040	1,100	235	145
4.	333	422	500	1,020	500	1,040	1,890	4,090	1,890	1,020	210	145
5.	320	422	500	1,020	625	1,020	2,040	3,650	1,890	1,020	210	165
6.	352	422	460	910	715	931	2,340	3,240	1,960	962	188	165
7.	333	422	460	910	810	910	2,520	3,050	1,860	910	165	165
8.	320	422	460	860	810	910	2,430	3,050	1,750	810	165	165
9.	320	422	460	810	810	890	2,260	3,440	1,890	791	165	145
10.	320	385	460	762	810	860	2,260	3,240	2,040	715	165	145
11.	320	385	524	810	734	810	2,600	2,960	2,430	697	145	145
12.	320	385	540	810	715	830	3,240	2,690	2,520	625	145	125
13.	320	385	540	931	715	1,020	3,980	2,550	2,690	557	145	125
14.	320	385	540	890	715	1,220	5,140	2,340	2,690	1,180	165	125
15.	320	385	540	910	715	1,750	5,620	2,340	2,600	810	165	145
16.	320	385	540	910	625	5,260	5,880	2,110	2,520	557	145	165
17.	320	385	540	1,020	625	11,600	6,520	2,260	2,520	540	145	165
18.	320	385	540	962	625	10,200	6,920	2,260	2,380	625	145	145
19.	320	460	460	910	697	7,180	6,260	2,110	2,260	582	145	145
20.	320	460	460	910	715	5,500	6,260	2,040	2,160	582	165	165
21.	320	460	385	860	715	4,320	7,180	2,110	1,890	460	290	188
22.	320	422	385	1,070	697	3,760	7,460	2,600	1,750	460	188	235
23.	320	422	460	1,240	670	3,240	7,050	2,690	1,750	460	235	320
24.	320	422	540	1,020	625	3,140	6,780	2,690	1,750	385	210	320
25.	320	460	810	860	625	3,050	6,130	2,520	1,590	385	201	260
26.	320	460	1,750	762	670	3,050	5,380	2,520	17,100	385	210	260
27.	352	540	2,180	830	715	3,440	4,780	2,690	1,360	352	188	235
28.	352	540	3,050	810	810	3,140	4,270	2,690	1,360	320	165	235
29.	352	668	1,960	810	1,020	2,780	3,980	2,430	1,360	320	165	235
30.	352	625	1,550	715	2,600	2,600	3,690	2,340	1,240	290	165	235
31.	352	1,300	670	2,260	2,260	2,260	2,340	2,340	260	145	145	235

Daily discharge, in second-feet, of John Day River at McDonald, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	260	422	320	422	810	1,480	3,440	3,440	3,870	910	260	93
2.....	260	422	320	352	810	1,620	3,440	3,050	3,980	810	320	93
3.....	260	460	272	400	810	1,960	3,870	3,050	4,900	715	272	93
4.....	260	582	333	422	810	2,260	4,320	3,240	5,260	715	260	93
5.....	260	540	385	460	810	2,260	4,320	3,980	4,900	625	235	109
6.....	260	540	460	460	810	2,600	3,650	4,900	4,550	540	210	133
7.....	260	460	460	346	734	2,260	3,240	4,440	4,200	540	210	125
8.....	260	460	460	963	715	2,040	2,870	3,980	3,760	540	188	352
9.....	260	460	460	729	715	1,820	2,520	3,760	3,240	540	188	220
10.....	260	422	422	524	715	1,750	2,430	3,440	2,960	540	165	210
11.....	290	422	422	414	715	1,750	2,600	3,440	2,780	860	165	210
12.....	290	422	422	380	715	1,620	3,240	3,440	4,200	625	165	210
13.....	290	422	422	380	715	1,480	2,870	3,240	2,260	582	165	210
14.....	290	422	385	562	625	1,420	2,870	3,050	2,180	582	145	188
15.....	308	385	385	486	670	1,550	3,440	3,050	2,340	540	145	188
16.....	320	385	385	486	860	1,820	3,870	2,870	2,180	460	125	188
17.....	320	385	385	562	1,180	2,340	3,870	2,870	2,180	385	125	201
18.....	460	385	385	6,220	3,340	3,050	4,090	2,870	2,340	385	125	210
19.....	625	385	540	4,410	3,650	3,440	3,980	2,870	2,040	385	125	188
20.....	540	385	460	3,650	2,920	2,780	3,440	2,690	2,110	352	125	188
21.....	460	385	460	4,500	2,430	2,520	3,440	2,660	2,040	320	125	188
22.....	460	422	320	4,900	1,890	2,340	3,440	2,690	1,890	320	125	165
23.....	460	422	352	4,200	1,690	2,160	3,050	2,690	1,750	320	109	165
24.....	460	422	352	2,600	1,480	2,040	2,870	2,520	1,550	320	109	165
25.....	460	422	385	1,890	1,480	2,180	3,050	2,340	1,360	260	109	165
26.....	422	460	385	1,485	1,480	2,690	2,690	2,180	1,240	260	109	165
27.....	385	500	385	1,240	1,615	3,140	2,870	2,340	1,240	235	109	188
28.....	385	460	385	1,240	1,480	3,760	3,340	2,690	1,120	250	93	210
29.....	400	460	400	1,015	.....	4,090	4,200	3,760	1,020	210	93	210
30.....	422	422	422	910	.....	4,090	3,980	4,660	1,020	210	93	210
31.....	422	.....	460	762	.....	3,870	.....	4,200	.....	235	93	.....
1909-10.												
1.....	210	265	1,480	1,060	1,890	7,050	5,260	3,970	1,200	375	87	75
2.....	210	290	1,890	762	2,430	11,400	5,260	3,650	1,140	342	87	75
3.....	188	320	1,750	962	1,680	14,000	5,510	3,450	1,080	310	87	75
4.....	188	320	3,010	1,060	1,550	13,000	5,510	3,250	980	310	87	75
5.....	220	320	1,120	1,020	1,300	11,800	5,020	3,060	960	310	87	75
6.....	235	320	962	762	1,240	12,300	4,540	3,060	835	281	87	75
7.....	235	352	697	810	1,420	9,220	4,540	2,880	790	281	87	75
8.....	235	385	910	1,020	1,550	5,760	5,510	2,530	700	252	75	75
9.....	235	385	1,020	1,020	1,420	5,380	5,510	2,530	700	252	75	75
10.....	235	385	1,180	1,060	1,240	7,630	6,010	2,530	610	252	75	75
11.....	235	385	1,550	1,180	1,120	7,770	6,940	3,060	610	226	75	75
12.....	250	385	1,550	1,120	1,120	7,910	7,210	3,450	700	200	75	87
13.....	260	385	2,040	1,120	1,240	8,490	7,070	3,350	700	200	75	87
14.....	260	385	1,620	1,120	1,480	8,920	6,800	2,970	610	178	75	87
15.....	235	385	2,040	1,240	1,550	9,370	6,400	2,790	568	178	75	87
16.....	235	385	1,550	1,240	2,260	9,670	5,640	2,530	568	155	75	87
17.....	235	385	1,300	1,240	1,620	9,970	5,260	2,360	525	155	75	87
18.....	235	385	1,020	1,550	1,240	9,970	5,020	2,200	525	155	75	87
19.....	235	308	1,020	1,480	1,240	10,300	5,020	2,040	525	155	75	87
20.....	235	308	1,020	910	1,180	10,900	5,380	1,890	525	137	75	119
21.....	235	260	1,020	715	1,180	14,000	6,140	1,740	525	137	75	155
22.....	235	476	910	3,140	1,180	13,700	6,400	1,740	525	137	75	200
23.....	235	962	910	3,050	1,240	12,100	5,760	1,600	486	137	75	200
24.....	260	5,620	762	4,440	1,120	13,800	5,380	1,460	486	119	75	200
25.....	260	6,520	500	6,130	4,550	10,900	5,260	1,670	447	119	75	178
26.....	260	3,980	670	3,870	5,750	9,220	5,510	1,320	447	119	75	178
27.....	260	2,780	762	2,340	4,670	8,340	5,510	1,320	447	103	75	178
28.....	260	2,110	962	2,040	3,650	7,350	5,510	1,390	411	103	75	178
29.....	260	1,680	962	1,890	.....	6,530	5,020	1,320	375	103	75	178
30.....	260	1,380	962	1,750	.....	6,010	4,540	1,320	375	103	75	178
31.....	260	.....	962	1,620	.....	5,510	.....	1,320	.....	103	75	.....

NOTE.—Daily discharge determined from rating curves applicable as follows:

1904 and 1905. Curves well defined between 100 and 500 second-feet.

1906. Curves well defined between 200 and 10,000 second-feet.

1907 to 1910. Jan. 1, 1907, to Mar. 23, 1910, curves well defined between 100 and 10,000 second-feet; Mar.

24 to Sept. 30, 1910, curves fairly well defined.

Monthly discharge of John Day River at McDonald, Oreg., for 1904-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
November 14-30.....	516	326	456	15,400	A.
December.....	569	295	489	30,100	A.
January.....	2,380	326	1,090	67,200	B.
February.....	2,380	326	1,180	65,600	B.
March.....	3,920	2,300	2,920	180,000	A.
April.....	4,280	2,710	3,300	196,000	A.
May.....	5,130	2,140	3,400	209,000	A.
June.....	2,620	1,010	1,700	102,000	A.
July.....	1,070	149	391	24,000	A.
August.....	170	88	112	6,890	A.
September.....	295	88	129	7,680	A.
The period.....				904,000	
1905-6.					
October.....	474	215	318	19,600	A.
November.....	474	266	355	21,100	A.
December.....	516	266	397	24,400	A.
January.....	1,550	372	672	41,300	B.
February.....	3,010	643	1,280	71,100	B.
March.....	9,730	1,480	3,820	235,000	A.
April.....	12,700	4,830	6,860	408,000	A.
May.....	13,800	1,960	3,390	208,000	A.
June.....	11,000	2,040	5,560	331,000	A.
July.....	1,920	265	760	46,700	A.
August.....	445	180	236	14,500	B.
September.....	352	162	234	13,900	B.
The year.....	13,800	162	1,990	1,430,000	
1906-7.					
October.....	352	242	288	17,700	A.
November.....	910	352	506	30,100	A.
December.....	3,440	320	969	59,600	A.
January.....	6,000	422	1,470	90,400	C.
February.....	22,800	3,440	7,890	438,000	A.
March.....	17,100	3,440	6,400	394,000	A.
April.....	13,800	4,550	8,550	509,000	A.
May.....	6,780	3,440	5,300	326,000	A.
June.....	3,980	1,620	2,630	156,000	A.
July.....	1,620	422	809	49,700	A.
August.....	810	210	324	19,900	A.
September.....	320	210	234	13,900	A.
The year.....	22,800	210	2,950	2,100,000	
1907-8.					
October.....	352	235	321	19,700	A.
November.....	625	352	433	25,800	A.
December.....	3,050	385	791	48,600	A.
January.....	1,240	670	908	55,800	A.
February.....	1,020	500	700	40,300	A.
March.....	11,600	810	2,910	179,000	A.
April.....	7,460	1,890	4,390	261,000	A.
May.....	4,090	2,040	2,770	170,000	A.
June.....	17,100	1,240	2,520	150,000	A.
July.....	1,180	260	659	40,500	A.
August.....	290	145	182	11,200	A.
September.....	320	125	183	10,900	A.
The year.....	17,100	125	1,400	1,010,000	
1908-9.					
October.....	625	260	357	22,000	A.
November.....	582	385	438	26,100	A.
December.....	540	272	400	24,600	A.
January.....	6,220	346	1,530	94,100	C.
February.....	3,650	625	1,310	72,800	A.
March.....	4,090	1,420	2,390	147,000	A.
April.....	4,320	2,430	3,380	201,000	A.
May.....	4,900	2,180	3,240	199,000	A.
June.....	5,260	1,020	2,620	156,000	A.
July.....	910	210	470	28,900	A.
August.....	320	93	158	9,720	A.
September.....	352	93	178	10,600	A.
The year.....	6,220	93	1,370	992,000	

Monthly discharge of John Day River at McDonald, Oreg., for 1904-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	260	188	238	14,600	A.
November.....	6,520	260	1,090	64,900	A.
December.....	3,010	500	1,230	75,600	A.
January.....	6,130	715	1,700	105,000	B.
February.....	5,750	1,120	1,900	106,000	B.
March.....	14,000	5,380	9,620	592,000	B.
April.....	7,210	4,540	5,610	334,000	B.
May.....	3,970	1,320	2,380	146,000	B.
June.....	1,200	375	646	38,400	B.
July.....	375	103	193	11,900	B.
August.....	87	75	77.7	4,780	B.
September.....	200	75	115	6,840	B.
The year.....	14,000	75	2,070	1,500,000	

SOUTH FORK OF JOHN DAY RIVER AT DAYVILLE, OREG.

Location.—In sec. 7, T. 13 S., R. 27 E., about half a mile above highway bridge in Dayville and 1 mile above mouth.

Records presented.—November 22, 1908, to September 30, 1910.

Drainage area.—600 square miles.

Gage.—Vertical staff spiked to alder tree on left bank.

Channel.—Stones and gravel; fairly permanent.

Discharge measurements.—Made from cable just below gage or by wading.

Winter flow.—Seldom affected by ice.

Diversions.—Dayville ditch carried water around gage; records of this diversion available (see p. 301). Also other diversions of which no record is obtainable.

Accuracy.—Results good.

Discharge measurements of South Fork of John Day River at Dayville, Oreg., in 1908-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 22	R. B. Post.....	0.46	41	Mar. 19	L. R. Allen.....	2.84	967
				19	.....do.....	2.95	1,000
1909.				20	.....do.....	3.20	1,160
Mar. 6	R. B. Post.....	1.10	187	June 7	.....do.....	.40	49
July 18	.....do.....	.21	23.3				

Daily gage height, in feet, of South Fork of John Day River at Dayville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1			0.41	0.44	0.69	1.08	1.60	1.31	0.93	0.32	0.17	0.02
2			.42	.46	.65	1.15	1.80	1.29	.89	.30	.16	.03
3			.42	.48	.67	1.20	1.88	1.31	.81	.29	.13	.85
4			.42	.48	.67	1.43	1.80	1.39	.79	.29	.11	.40
5			.45	.49	.67	1.21	1.70	1.34	.75	.24	.08	.45
6			.42	.39	.65	1.12	1.62	1.31	.75	.29	.08	.35
7			.42	.59	.60	1.08	1.53	1.30	.71	.31	.08	.25
8			.42	.61	.55	1.05	1.46	1.22	.73	.31	.04	.25
9			.42	.30	.60	1.02	1.50	1.20	.72	.29	.02	.20
10			.42		.60	.94	1.55	1.17	.72	.37	.02	.20
11			.39		.48	.90	1.52	1.17	.72	.37	.02	.20
12			.43		.52	.89	1.51	1.17	.68	.34	.02	.20
13			.42		.99	.99	1.61	1.12	.65	.29	.02	.20
14			.40	.70	.89	1.28	1.74	1.08	.63	.28	.02	.20
15			.35	.80	.90	1.39	1.70	1.06	.65	.27	.02	.18
16			.39	1.38	1.70	1.56	1.70	1.04	.63	.24	.01	.18
17			.40	1.58	2.15	1.64	1.71	1.03	.63	.23	.02	.18
18			.39	1.50	2.10	1.42	1.65	1.00	.67	.21	.02	.18
19			.43	1.99	1.42	1.38	1.60	.97	.61	.20	.02	.18
20			.43	2.09	1.20	1.35	1.56	.95	.61	.20	.02	.18
21			.43	1.89	1.09	1.33	1.50	.90	.60	.19	.02	.18
22		0.45	.43	1.49	1.00	1.28	1.45	.90	.56	.18	.02	.20
23		.48	.41	.99	.95	1.25	1.45	.89	.51	.15	.02	.20
24		.48	.41	.90	1.01	1.60	1.42	.85	.50	.15	.01	.20
25		.48	.41	.91	.99	1.60	1.38	.81	.48	.15	.02	.20
26		.48	.41	.80	.91	1.60	1.40	.81	.48	.15	.03	.20
27		.40	.41	.60	.85	1.65	1.42	1.00	.41	.20	.03	.19
28		.39	.45	.60	.98	1.78	1.42	1.16	.39	.20	.04	.19
29		.39	.45	.60		1.80	1.41	1.06	.38	.20	.02	.20
30		.41	.38	.60		1.66	1.40	.97	.36	.18	.02	.21
31			.44	.69		1.62		.94		.18	.02	.21
1909-10.												
1	0.21	.23	.70	.50	.84	3.97	1.82	1.02	.41	.17	-.04	-.06
2	.21	.27	.68	.40	.68	4.20	1.84	1.00	.41	.14	-.04	-.05
3	.22	.30	.56	.32	.62	3.40	1.80	1.05	.44	.16	-.04	-.05
4	.22	.29	.36	.56	.79	2.73	1.70	1.08	.44	.20	-.04	-.04
5	.22	.32	.51	.50	.79	2.48	1.66	1.02	.39	.19	-.04	-.02
6	.24	.36	.56	.50	.75	2.15	1.65	.98	.39	.14	-.04	.08
7	.25	.36	.51	.55	.69	2.21	1.62	.97	.38	.12	-.04	.04
8	.22	.34	.58	.55	.70	2.03	1.62	.98	.32	.11	-.04	.03
9	.22	.38	.80	.48	.68	2.18	1.67	.86	.32	.10	-.04	.03
10	.23	.38	.65	.50	.67	2.18	1.67	.91	.30	.08	-.05	.03
11	.23	.38	.60	.50	.69	2.28	1.70	.91	.29	.05	-.05	.03
12	.23	.36	.75	.43	.71	2.30	1.64	.84	.30	.01	-.05	.04
13	.23	.37	1.09	.43	.86	2.29	1.58	.80	.28	.00	-.05	.06
14	.23	.36	.76	.45	1.36	2.43	1.51	.79	.25	.00	-.10	.07
15	.23	.32	.60	.43	.91	2.48	1.50	.75	.22	-.01	-.10	.08
16	.23	.30	.59	.41	.73	2.54	1.48	.72	.27	-.01	-.10	.10
17	.23	.33	.64	.41	.76	2.60	1.42	.70	.34	-.01	-.10	.11
18	.23	.36	.60	.51	.74	2.60	1.36	.68	.30	-.01	-.10	.11
19	.23	.37	.59	.52	.73	2.78	1.34	.66	.28	-.05	-.10	.10
20	.25	.38	.56	.46	.70	3.40	1.34	.60	.25	.01	-.10	.10
21	.26	.48	.50	.56	.65	3.18	1.34	.60	.25	.03	-.10	.10
22	.24	2.10	.59	.90	.68	3.07	1.29	.59	.25	.01	-.10	.10
23	.24	3.20	.51	1.82	.69	3.25	1.25	.57	.30	.01	-.10	.12
24	.24	1.65	.58	1.80	2.11	2.70	1.20	.55	.25	.00	-.10	.12
25	.23	1.20	.55	1.30	2.11	2.52	1.18	.57	.23	.00	-.10	.12
26	.23	.95	.50	.90	1.48	2.50	1.12	.57	.21	.00	-.10	.12
27	.25	.80	.49	.83	1.29	2.18	1.10	.58	.21	.00	-.08	.12
28	.23	.73	.49	.85	3.18	2.05	1.10	.56	.17	.03	-.08	.12
29	.23	.70	.49	.70		2.00	1.04	.53	.18	-.04	-.08	.12
30	.21	.45	.50	.82		1.91	1.03	.49	.16	-.03	-.10	.12
31	.21		.53	1.40		1.89		.46		-.04	-.08	

NOTE.—Ice present Jan. 7-17, 1909, and Jan. 1-8, 1910.

Daily discharge, in second-feet, of South Fork of John Day River at Dayville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.			39	44	86	180	365	254	140	28	15	5
2.			41	46	78	200	445	246	129	26	14	6
3.			41	49	82	215	481	254	111	25	12	120
4.			41	49	82	297	450	282	107	25	11	38
5.			45	51	82	218	405	264	98	21	9	45
6.			41	37	78	191	373	254	98	25	9	32
7.			41	67	69	180	337	250	90	27	9	22
8.			41	71	60	172	309	222	94	27	6	22
9.			41	26	69	163	325	215	92	25	5	17
10.			41	36	69	142	345	206	92	34	5	17
11.			37	46	49	132	333	206	92	34	5	17
12.			42	59	55	130	329	206	84	31	5	17
13.			41	73	155	155	369	191	78	25	5	17
14.			38	88	130	243	421	180	75	24	5	17
15.			32	109	132	282	405	174	78	23	5	16
16.			37	278	405	349	405	169	75	21	5	16
17.			38	357	605	381	409	166	75	20	5	16
18.			37	325	580	293	385	158	82	18	5	16
19.			42	530	293	278	365	150	71	17	5	16
20.			42	576	215	268	349	145	71	17	5	16
21.			42	486	182	260	325	132	69	16	5	16
22.		45	42	321	158	243	305	132	62	16	5	17
23.		49	39	155	145	232	305	130	54	14	5	17
24.		49	39	132	161	365	293	120	52	14	5	17
25.		49	39	135	155	365	278	111	49	14	5	17
26.		49	39	109	135	365	285	111	49	14	6	17
27.		38	39	69	120	385	293	158	39	17	6	16
28.		37	45	69	153	437	293	203	37	17	6	16
29.		26	45	69	-----	445	289	174	36	17	5	17
30.		39	36	69	-----	389	285	150	33	16	5	18
31.		-----	44	86	-----	373	-----	142	-----	16	5	-----
1909-10.												
1.	18	20	88	58	121	1,630	449	166	45	22	9.8	9.2
2.	18	23	84	44	88	1,770	458	160	45	20	9.8	9.5
3.	19	26	62	34	78	1,280	440	174	50	21	9.8	9.5
4.	19	25	33	68	110	900	398	182	50	24	9.8	9.8
5.	19	28	54	58	110	765	382	166	43	23	9.8	10
6.	21	33	62	58	102	600	378	155	43	20	9.8	16
7.	22	33	54	66	90	629	366	152	42	18	9.8	13
8.	19	31	66	66	92	544	366	155	34	18	9.8	13
9.	19	36	109	55	88	614	386	125	34	17	9.8	13
10.	20	36	78	58	87	614	386	137	32	16	9.5	13
11.	20	36	69	58	90	663	398	137	31	14	9.5	13
12.	20	33	98	48	94	673	374	121	32	12	9.5	13
13.	20	34	182	48	125	668	350	112	30	11	9.5	15
14.	20	33	101	51	270	739	324	110	28	11	8	15
15.	20	28	69	48	137	765	320	102	26	11	8	16
16.	20	26	67	45	98	797	313	96	30	11	8	17
17.	20	30	77	45	104	829	291	92	37	11	8	18
18.	20	33	69	60	100	829	270	88	32	11	8	18
19.	20	34	67	61	98	927	264	85	30	10	8	17
20.	22	36	62	52	92	1,280	264	74	28	12	8	17
21.	22	49	52	68	83	1,150	264	74	28	13	8	17
22.	21	580	67	134	88	1,090	247	72	28	12	8	17
23.	21	1,190	54	449	90	1,190	234	69	32	12	8	18
24.	21	385	66	440	581	883	218	66	28	11	8	18
25.	20	215	60	250	581	786	212	69	26	11	8	18
26.	20	145	52	134	313	775	194	69	25	11	8	18
27.	22	109	51	119	247	614	188	71	25	11	8.6	18
28.	20	94	51	123	1,150	553	188	68	22	10	8.6	18
29.	20	88	51	92	-----	530	171	63	23	9.8	8.6	18
30.	18	45	52	116	-----	489	168	57	21	10	8	18
31.	18	-----	57	284	-----	476	-----	52	-----	9.8	8.6	-----

NOTE.—Daily discharge determined as follows:
 1908 and 1909. From rating curves fairly well defined between 17 and 185 second-feet. Interpolated because of ice, Jan. 10-13, 1909.
 1910. From curves well defined between 20 and 1,200 second-feet.

Monthly discharge of South Fork of John Day River at Dayville, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
November 22-30.....	49	26	42.3	755	B.
December.....	45	32	40.2	2,470	B.
January.....	576	26	149	9,100	B.
February.....	605	49	164	9,110	A.
March.....	445	130	269	16,500	A.
April.....	481	285	352	20,900	A.
May.....	282	111	186	11,400	A.
June.....	140	33	77.1	4,590	B.
July.....	34	14	21.4	1,320	B.
August.....	15	5	6.55	403	C.
September.....	120	5	21.9	1,300	B.
The period.....				77,900	
1909-10.					
October.....	22	18	20.0	1,230	B.
November.....	1,190	20	117	6,960	B.
December.....	182	33	69.8	4,290	B.
January.....	449	34	106	6,520	B.
February.....	1,150	78	190	10,600	B.
March.....	1,770	476	840	51,600	A.
April.....	458	168	309	18,400	A.
May.....	182	52	107	6,580	A.
June.....	50	21	32.7	1,950	A.
July.....	24	9.8	14	861	B.
August.....	9.8	8.0	8.79	540	B.
September.....	18	9.2	15.1	898	B.
The year.....	1,770	8.0	152	110,000	

DAYVILLE DITCH AT DAYVILLE, OREG.

Location.—In sec. 7, T. 13 S., R. 27 E., directly opposite gage on South Fork of John Day River at Dayville.

Records presented.—June 7 to September 30, 1910.

Gage.—Vertical staff.

Channel.—Gravel; practically permanent.

Discharge measurements.—Made by wading near gage.

Accuracy.—Results fair.

Discharge measurements of Dayville ditch at Dayville, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Dis- charge.
June 7	L. R. Allen.....	<i>Feet.</i> 1.50	<i>Sec.-ft.</i> 4.5
7	do.....	1.23	2.0
Oct. 25	R. W. Davenport.....	.77	a .25

^a Discharge estimated.

Daily gage height, in feet, of Dayville ditch at Dayville, Oreg., for 1910.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1.....		1.03	0.98	1.61	16.....	1.41	1.10	1.40	1.05
2.....		1.02	1.00	1.61	17.....	1.49	1.10	1.40	.95
3.....		.99	1.00	1.59	18.....	1.44	1.09	1.40	.90
4.....		1.07	.99	1.59	19.....	1.41	.98	1.40	.84
5.....		1.05	.99	1.24	20.....	1.36	1.06	1.41	.80
6.....		1.00	.99	.80	21.....	1.35	1.15	1.41	.78
7.....		.90	1.00	1.00	22.....	1.35	1.03	1.41	.78
8.....	1.40	.92	1.00	1.00	23.....	.99	1.06	1.39	.76
9.....	1.44	1.07	1.00	1.00	24.....	.95	1.03	1.39	.78
10.....	1.42	1.05	1.01	1.00	25.....	.95	1.03	1.41	.78
11.....	1.40	1.04	1.01	1.06	26.....	.91	.95	1.44	.78
12.....	1.45	1.18	1.01	1.10	27.....	.91	.98	1.48	.78
13.....	1.42	1.15	1.02	1.02	28.....	.90	.95	1.50	.78
14.....	1.34	1.20	1.25	.95	29.....	.90	.95	1.50	.78
15.....	1.30	1.10	1.36	.92	30.....	1.03	.98	1.53	.78
					31.....		.99	1.59	.....

Daily discharge, in second-feet, of Dayville ditch at Dayville, Oreg., for 1910.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1.....		0.9	0.7	5.7	16.....	3.6	1.2	3.5	1.0
2.....		.8	.8	5.7	17.....	4.4	1.2	3.5	.6
3.....		.8	.8	5.5	18.....	3.9	1.2	3.5	.5
4.....		1.1	.8	5.5	19.....	3.6	.7	3.5	.4
5.....		1.0	.8	2.1	20.....	3.1	1.0	3.6	.3
6.....		.8	.8	.3	21.....	3.0	1.5	3.6	.3
7.....		.5	.8	.8	22.....	3.0	.9	3.6	.3
8.....	3.5	.6	.8	.8	23.....	.8	1.0	3.4	.3
9.....	3.9	1.1	.8	.8	24.....	.6	.9	3.4	.3
10.....	3.7	1.0	.8	.8	25.....	.6	.9	3.6	.3
11.....	3.5	1.0	.8	1.0	26.....	.5	.6	3.9	.3
12.....	4.0	1.7	.8	1.2	27.....	.5	.7	4.3	.3
13.....	3.7	1.5	.9	.9	28.....	.5	.6	4.5	.3
14.....	3.0	1.8	2.2	.6	29.....	.7	.6	4.5	.3
15.....	2.6	1.2	3.1	.6	30.....	.9	.7	4.8	.3
					31.....		.8	5.5	.....

NOTE.—Daily discharge determined from a fairly well-defined rating curve. During the summer and all the relation of gage height and discharge may be somewhat affected by weeds and leaves in the ditch.

Monthly discharge of Dayville ditch at Dayville, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
June 8-30.....	4.4	0.5	2.50	114	B.
July.....	1.8	.5	.98	60.3	B.
August.....	5.5	.7	2.53	156	B.
September.....	5.7	.3	1.27	75.6	B.
The period.....				406	

ROCK CREEK NEAR ARLINGTON, OREG.

Locality.—About sec. 14, T. 1 N., R. 20 E., at highway bridge at Rock Creek station of the Oregon-Washington Railroad & Navigation Co., 6 miles above mouth of stream, about 12 miles from Arlington.

Records presented.—February 25, 1905, to March 16, 1906.

Drainage area.—630 square miles.

Gage.—Gage heights obtained by measuring down from bridge by means of a graduated rod.

Channel.—Sand and gravel; fairly permanent.

Discharge measurements.—Made from bridge or by wading.

Accuracy.—Records fair.

Discharge measurements of Rock Creek near Arlington, Oreg., in 1905-1906.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Feb. 25	W. C. Sawyer.....	6.81	201	Oct. 24	W. C. Sawyer.....	5.07	.3
Mar. 18	.....do.....	5.77	46	Dec. 5	R. S. Hall.....	5.06	a. 1
26	J. H. Lewis.....	6.91	155	1906.			
Apr. 8	.....do.....	6.15	83	Feb. 6	F. C. Dillard.....	5.67	35
May 10	W. C. Sawyer.....	5.85	39	Feb. 23	.....do.....	6.48	122
Aug. 17	.....do.....		.0	Mar. 16	.....do.....	6.07	87

a Estimated.

Daily gage height, in feet, of Rock Creek near Arlington, Oreg., for 1905.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1.....		6.2	6.25	5.3	5.8	5.3	5.0
2.....		6.1	6.25	5.45	5.6	5.2	5.3
3.....		6.2	6.65	5.4	5.55	5.05	5.05
4.....		6.15	6.45	5.45	5.4	5.0	5.0
5.....		6.15	6.4	5.55	5.4	5.05	5.0
6.....		6.15	6.3	5.6	5.4	5.05	5.0
7.....		6.0	6.15	5.6	5.4	5.05	5.0
8.....		5.95	6.1	5.6	5.35	5.05	5.0
9.....		5.9	6.05	5.55	5.35	5.1	5.0
10.....		5.8	6.1	5.85	5.3	5.1	5.0
11.....		5.7	6.05	5.83	5.3	5.05	5.0
12.....		5.7	5.95	5.75	5.25	5.05	5.0
13.....		5.65	5.85	5.7	.25	5.05	4.95
14.....		5.75	5.85	5.7	5.2	5.05	4.95
15.....		5.7	5.8	5.6	5.2	5.05	4.95
16.....		5.7	5.8	5.55	5.1	5.0	4.95
17.....		5.65	5.8	5.5	5.1	5.0	4.95
18.....		5.75	5.75	5.5	5.1	5.0	5.1
19.....		6.1	5.7	5.5	5.15	5.0	5.0
20.....		6.1	5.7	5.45	5.05	5.0	.....
21.....		6.1	5.7	5.45	5.05	5.0	.....
22.....		6.65	5.65	5.4	5.05	5.0	.....
23.....		6.4	5.7	5.4	5.05	5.0	.....
24.....		6.78	5.7	5.45	5.05	5.0	.....
25.....	6.8	7.0	5.6	5.45	5.05	4.95	.....
26.....	6.2	6.7	5.4	5.45	5.2	4.95	.....
27.....	6.25	7.0	5.4	5.45	5.5	4.95	.....
28.....	6.15	6.6	5.45	5.4	5.35	4.95	.....
29.....		6.45	5.4	5.35	5.3	5.0	.....
30.....		6.35	5.3	5.35	5.35	5.0	.....
31.....		6.2		5.3	.....	5.0	.....

Daily discharge, in second-feet, of Rock Creek near Arlington, Oreg., for 1905.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1.....		88	95	10	45	10	0
2.....		76	95	18	28	6	10
3.....		88	167	15	24	1	1
4.....		82	127	18	15	0	0
5.....		82	118	24	15	1	0
6.....		82	102	28	15	1	0
7.....		64	82	28	15	1	0
8.....		59	76	28	12	1	0
9.....		54	70	24	12	2	0
10.....		45	76	50	10	2	0
11.....		36	70	48	10	1	0
12.....		36	59	40	8	1	0
13.....		32	50	36	8	1	0
14.....		40	50	36	6	1	0
15.....		36	45	28	6	1	0
16.....		36	45	24	2	0	0
17.....		32	45	21	2	0	0
18.....		40	40	21	2	0	2
19.....		76	36	21	4	0	0
20.....		76	36	18	1	0	.....
21.....		76	36	18	1	0	.....
22.....		167	32	15	1	0	.....
23.....		118	36	15	1	0	.....
24.....		197	36	18	1	0	.....
25.....		202	256	18	1	0	.....
26.....	88	178	15	18	6	0	.....
27.....	95	256	15	18	21	0	.....
28.....	82	156	18	15	12	0	.....
29.....		127	15	12	10	0	.....
30.....		110	10	12	12	0	.....
31.....		88	.....	10	.....	0	.....

NOTE.—Daily discharge determined from a rating curve fairly well defined between 20 and 200 second-feet.

Monthly discharge of Rock Creek near Arlington, Oreg., for 1905.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
March.....	256	32	93.2	5,730	B.
April.....	167	10	57.5	3,420	B.
May.....	50	10	22.7	1,400	B.
June.....	45	1	10.2	607	C.
July.....	10	0	.97	60	C.
The period.....				11,200	

DESCHUTES RIVER BASIN.

GENERAL FEATURES.

Deschutes River has its source in a number of mountain lakes at the summit of the Cascades just over the mountains from the headwaters of Willamette River, and its course is northward to the Columbia, which it enters about 15 miles above The Dalles.

The principal tributaries of Deschutes River are White, Warm-springs, Metolius, and Crooked rivers, and East Fork. All except Crooked River drain the eastern slope of the Cascades and contribute the larger portion of the stream flow.

The drainage area of the river is largely indeterminate, as there are large areas along the topographical border of the basin which have

no surface streams, the water all sinking into the soil and underlying rock and draining off underground.

Topographically the area is rough and mountainous. The agricultural lands consist largely of high table-lands cut by deep canyons through which the rivers flow, and small arable areas which border the streams. The soil is a coarse disintegrated lava. The rocks of the entire area are volcanic and so peculiarly porous that the basin has the effect of a huge sponge. The flow of the Deschutes is more remarkably uniform than that of any river in the United States comparable with it in size, and its economic value is almost incalculable. At the mouth of the stream the maximum flow is only six times the minimum. Ocular evidence of this uniformity of flow is presented by the low grass-grown banks between which the river flows for its entire course.

The general elevation of the lands around Bend is 3,600 feet above sea level; that of the summit of the Cascade Mountains is from 5,000 to 6,000 feet. Prineville is 2,868 feet above sea level, and Paulina, near the upper portion of the Crooked River basin, 3,684 feet.

The only heavily timbered portion of this drainage basin is found on the eastern slope of the Cascades, and constitutes about 15 per cent of the total area. The divide between Crooked River and the John Day basin is sparsely timbered. The uniform flow of this stream can not be attributed to forestation. Indeed the entire timber supply could be removed without in the least affecting the flow of the river.

The annual rainfall ranges from 100 inches on the summit of the Cascade Mountains to 10 inches along the main course of the stream. Twenty-five miles farther east, at Prineville, the mean annual rainfall is 9 inches; at Warm Springs, 11 inches; at Bend, 15 inches. On the headwaters of Crooked River the precipitation is probably 20 inches or more.

Although the winter temperatures are low, ice does not usually affect the flow of the streams, for the winter flow is derived largely from springs. The high stages usually occur during the months of April, May, and June, and result from the melting of snows in the mountains, although occasionally floods are caused by "chinook" winds in the early spring or late fall.

It has been estimated that Deschutes River between Benham Falls and its mouth, a distance of 140 miles, together with its principal tributary, Metolius River, is capable of furnishing about 600,000 horsepower from the low-water flow after all water possible has been diverted for irrigation. The United States Geological Survey has published a report on Deschutes River and its utilization,¹ in which its water powers are described and the conditions of development discussed.

¹ Henshaw, F. F., and others, Deschutes River and its utilization: U. S. Geol. Survey Water-Supply Paper 344, 1914.

DESCHUTES RIVER ¹ NEAR LAPINE, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 26, T. 20 S., R. 10 E., at Forest Service bridge, 4 miles above mouth of East Fork, and 11 miles north of Lapine, Oreg.

Records presented.—September 22 to September 30, 1910.

Drainage area.—495 square miles; not including an area of 66 square miles west of the head of Tumalo Creek, which has no surface streams, but which may contribute water to the Deschutes underground.

Gage.—Vertical staff nailed to bent of bridge.

Channel.—Gravel and sand; somewhat shifting; affected by weeds; tortuous; gradient low.

Discharge measurements.—Made from upper side of bridge.

Cooperation.—Gage-height record furnished by United States Forest Service.

The following measurement was made by Allen and Davenport:

September 21, 1910: Gage height, 1.50 feet; discharge, 1,110 second-feet.

Daily gage height, in feet, of Deschutes River near Lapine, Oreg., for 1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1.....		11.....		21.....	
2.....		12.....		22.....	1.45
3.....		13.....		23.....	1.45
4.....		14.....		24.....	
5.....		15.....		25.....	
6.....		16.....		26.....	
7.....		17.....		27.....	1.41
8.....		18.....		28.....	1.40
9.....		19.....		29.....	1.40
10.....		20.....		30.....	1.40
				31.....	

DESCHUTES RIVER ¹ NEAR LAVA, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 24, T. 20 S., R. 10 E., about $1\frac{1}{2}$ miles west of the former Lava post office, $1\frac{1}{2}$ miles above the junction with East Fork or Little River, as it is locally known.

Records presented.—February 20, 1905, to April 28, 1907; April 23, 1909, to September 30, 1910.

Drainage area.—About 500 square miles, not including area at head of Tumalo Creek without surface streams.

Gage.—Inclined staff on right bank.

Channel.—Gravel; somewhat shifting; some vegetation at the edges; backwater from the East Fork extends up to gage when that stream is relatively high.

Discharge measurements.—Made from cable 300 feet below the gage.

Winter flow.—Ice seldom found on this stream.

Accuracy.—Results good.

¹ Formerly known as West Fork of Deschutes River and as Big River.

Discharge measurements of Deschutes River near Lava, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Fect.</i>	<i>Sec.-ft.</i>	1907.		<i>Fect.</i>	<i>Sec.-ft.</i>
Mar. 3	I. Landes.....	8.89	1,140	Apr. 9	I. E. Oakes.....	8.75	1,130
Apr. 25	.....do.....	8.59	1,080	1908.			
May 23	.....do.....	8.60	1,060	Mar. 27	H. D. McGlashan.....	8.46	1,010
June 23	.....do.....	8.44	1,030	1909.			
Aug. 9	.....do.....	8.24	993	Jan. 3	R. B. Post.....	8.2	962
Oct. 8	.....do.....	8.20	986	Apr. 23	.....do.....	8.41	962
28	.....do.....	8.01	926	Dec. 14	.....do.....	9.32	1,140
Nov. 17	.....do.....	7.87	917	1910.			
Dec. 9	.....do.....	7.74	870	Apr. 26	L. R. Allen.....	9.24	1,130
27	.....do.....	7.77	903	June 21	.....do.....	9.03	1,160
27	.....do.....	7.77	904	Sept. 21	Allen and Davenport..	8.74	1,090
1906.							
Apr. 13	I. Landes.....	7.91	910				
May 2	.....do.....	8.10	880				
13	.....do.....	8.30	942				
June 11	.....do.....	8.39	955				
21	Stevens and Landes....	8.26	914				

Daily gage height, in feet, of Deschutes River near Lava, Oreg., for 1905-1907 and 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1						8.9	8.8					
2						8.9	8.8	8.65				8.15
3						8.9	8.77			8.4		
4						8.9	8.7					
5						8.93	8.7		8.6			
6						8.95						
7						8.95	8.7				8.2	
8						8.92						
9						8.9		8.7				8.25
10						8.9				8.3		
11						8.9	8.6					
12						8.85			8.5			
13						8.8					8.2	
14						8.8						
15						8.8						
16						8.83		8.6				8.01
17						8.8				8.3		
18						8.8	8.6					
19						8.82			8.45			
20					8.8	8.82		8.6			8.2	
21					8.8	8.98						
22					8.8	8.98		8.6				
23					8.85	8.9						8.01
24					8.9	8.92				8.3		
25					8.87	8.9	8.6					
26					8.85	8.92			8.45		8.2	
27					8.88	8.95						
28					8.87	8.88						
29						8.9		8.6				
20						8.8						8.02
31						8.72				8.25		

Daily gage height, in feet, of Deschutes River near Lava, Oreg., for 1905-1907 and 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.								8.50	8.70	8.62	8.56	8.60
2.								8.50	8.74	8.60	8.56	8.60
3.								8.50	8.78	8.60	8.56	8.65
4.								8.50	8.81	8.60	8.56	8.65
5.								8.50	8.82	8.72	8.58	8.65
6.								8.50	8.82	8.75	8.58	8.60
7.								8.50	8.82	8.65	8.58	8.60
8.								8.50	8.87	8.68	8.58	8.60
9.								8.50	8.87	8.68	8.58	8.60
10.								8.62	8.85	8.65	8.58	8.60
11.								8.61	8.80	8.65	8.58	8.60
12.								8.60	8.76	8.60	8.58	8.60
13.								8.58	8.75	8.60	8.60	8.60
14.								8.58	8.82	8.58	8.60	8.60
15.								8.55	8.75	8.58	8.60	8.55
16.								8.53	8.78	8.58	8.60	8.55
17.								8.50	8.90	8.58	8.60	8.55
18.								8.48	8.90	8.55	8.60	8.55
19.								8.48	8.90	8.55	8.60	8.55
20.								8.45	8.85	8.55	8.60	8.55
21.								8.43	8.80	8.55	8.60	8.55
22.								8.41	8.76	8.55	8.60	8.55
23.							8.40	8.41	8.75	8.55	8.60	8.55
24.							8.40	8.42	8.70	8.55	8.60	8.55
25.							8.40	8.42	8.70	8.55	8.60	8.55
26.								8.40	8.42	8.70	8.55	8.60
27.								8.50	8.49	8.68	8.56	8.60
28.								8.50	8.52	8.67	8.56	8.60
29.								8.50	8.58	8.65	8.56	8.60
30.								8.50	8.65	8.65	8.56	8.60
31.								8.70	8.70	8.56	8.60	8.50
1909-10.												
1.	8.50	8.50	10.40	8.7	8.5	8.95	9.1	9.3	9.2	9.0	8.9	8.8
2.	8.50	8.45	10.00	9.0	8.5	9.15	9.1	9.3	9.1	9.0	8.9	8.8
3.	8.50	8.45	10.00	10.5	9.65	9.2	9.2	9.4	9.1	9.0	8.9	8.8
4.	8.50	8.40	10.00	11.0	11.4	9.25	9.2	9.45	9.1	9.0	8.9	8.7
5.	8.50	8.40	10.00	11.3	10.65	9.4	9.15	9.4	9.1	9.0	8.9	8.7
6.	8.50	8.40	9.60	11.3	8.5	9.4	9.1	9.3	9.1	9.0	8.9	8.7
7.	8.48	8.40	9.40	11.6	8.5	9.4	9.05	9.3	9.1	8.95	8.9	8.7
8.	8.48	8.40	9.40	11.8	8.5	9.3	9.05	9.3	9.1	8.95	8.9	8.7
9.	8.48	8.40	9.40	11.5	8.5	9.3	9.05	9.3	9.0	8.95	8.9	8.7
10.	8.45	8.40	9.40	10.95	8.5	9.3	9.05	9.5	9.0	8.95	8.9	8.7
11.	8.45	8.40	9.40	9.3	8.5	9.2	9.05	9.5	9.1	8.95	8.9	8.7
12.	8.45	8.35	9.40	8.5	8.4	9.2	9.05	9.45	9.1	8.95	8.9	8.7
13.	8.43	8.35	9.33	8.5	8.4	9.2	9.05	9.45	9.05	8.95	8.9	8.7
14.	8.40	8.30	9.30	8.5	8.4	9.3	9.05	9.4	9.05	8.95	8.8	8.7
15.	8.40	8.30	9.30	8.5	8.4	9.3	9.05	9.35	9.05	8.95	8.8	8.7
16.	8.40	8.35	9.20	8.5	8.4	9.3	9.05	9.35	9.05	8.95	8.8	8.7
17.	8.40	8.38	9.10	8.5	8.4	9.3	9.1	9.3	9.05	8.95	8.8	8.7
18.	8.40	8.40	9.00	8.5	8.4	9.3	9.1	9.3	9.05	8.95	8.8	8.7
19.	8.40	8.42	9.00	8.5	8.4	9.3	9.1	9.25	9.05	8.95	8.8	8.7
20.	8.40	8.80	9.00	8.5	8.4	9.3	9.15	9.2	9.05	8.95	8.8	8.7
21.	8.40	8.80	9.00	8.5	8.4	9.3	9.15	9.2	9.05	8.95	8.8	8.7
22.	8.40	9.35	8.90	8.5	8.4	9.3	9.2	9.2	9.05	8.95	8.8	8.7
23.	8.40	10.15	10.15	8.5	8.4	9.3	9.2	9.2	9.05	8.95	8.8	8.7
24.	8.40	10.15	11.80	8.5	8.4	9.4	9.2	9.2	9.05	8.95	8.8	8.7
25.	8.40	11.20	11.50	8.5	8.4	9.35	9.2	9.2	9.05	8.9	8.8	8.6
26.	8.40	11.50	9.00	8.5	8.4	9.3	9.25	9.2	9.0	8.9	8.8	8.6
27.	8.40	11.30	8.70	8.5	8.5	9.2	9.3	9.2	9.0	8.9	8.8	8.6
28.	8.40	11.00	8.70	8.5	8.6	9.2	9.3	9.2	9.0	8.9	8.8	8.6
29.	8.40	10.70	8.70	8.5	8.5	9.15	9.3	9.2	9.0	8.9	8.8	8.6
30.	8.40	10.40	8.70	8.5	8.5	9.1	9.3	9.2	8.95	8.9	8.8	8.6
31.	8.50	8.70	8.70	8.5	8.5	9.1	9.1	9.2	8.9	8.8	8.8	8.6

NOTE.—Ice present during January, 1906, Jan. 6-26, 1907, Dec. 23-25, 1909, Jan. 3-10 and Feb. 3-5, 1910.

Daily discharge, in second-feet, of Deschutes River near Lava, Oreg., for 1905-1907, 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1						1,130	1,100					
2						1,130	1,100	1,070				950
3						1,130	1,090			1,010		
4						1,130	1,080					
5						1,140	1,080		1,060			
6						1,140						
7						1,140	1,080				962	
8						1,130						
9						1,130		1,080				974
10						1,130				985		
11						1,130	1,060					
12						1,120			1,030			
13						1,100					962	
14						1,100						
15						1,100						
16						1,120		1,060				916
17						1,100				985		
18						1,100	1,060					
19						1,100			1,020			
20					1,100	1,100		1,060			962	
21					1,100	1,150						
22					1,100	1,150		1,060				
23					1,120	1,130						916
24					1,130	1,130				985		
25					1,120	1,130	1,060					
26					1,120	1,130			1,020		962	
27					1,130	1,140						
28					1,120	1,130						
29						1,130		1,060				
30						1,100						916
31						1,080				974		
1905-6.												
1					803						928	
2				870	803							
3					803	803						
4		904		847	803	803				950		
5				825	803			960	996		939	
6				825	803							
7	962			836	803		870					916
8				825	803			890				
9			847	825	803							
10				825	803	825						
11		893		825	803					950		
12				825	803				940		950	
13				847	803			920				
14	928			836	803		916					962
15				836	803							
16			870	882	803							
17		893		825	814	781		940				
18			858	847	825					950		
19				836	847						939	
20				825	836			920				
21	928		847	814	825				910			916
22				825	825							
23			916	836	825							
24				836	825	803			962	939		
25		870	847	825	825							
26				825					974		950	
27				825								
28	916		836	814	803		900					916
29				814								
30			870	814								
31				814		858					950	

Daily discharge, in second-feet, of Deschutes River near Lava, Oreg., for 1905-1907,
1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.												
2.	939	893			939	920						
3.												
4.												
5.	916					985						
6.				939								
7.												
8.			939									
9.	916	916			1,000	1,100	1,020					
10.												
11.		916										
12.	939	893		916								
13.												
14.							1,030					
15.			893			939						
16.	939	939			1,060							
17.												
18.												
19.	916			1,060								
20.												
21.												
22.			847									
23.					960	940						
24.		904										
25.												
26.	904			870								
27.												
28.												
29.			916				1,080					
30.		893				939						
31.												
1909.												
1.								960	1,000	1,060	1,050	1,060
2.								960	1,010	1,060	1,050	1,060
3.								960	1,020	1,060	1,050	1,070
4.								960	1,030	1,060	1,050	1,070
5.								960	1,040	1,080	1,050	1,070
6.								960	1,040	1,090	1,050	1,060
7.								960	1,040	1,070	1,050	1,060
8.								960	1,050	1,080	1,050	1,060
9.								960	1,050	1,080	1,050	1,060
10.								985	1,040	1,070	1,050	1,060
11.								982	1,030	1,070	1,050	1,060
12.								980	1,020	1,060	1,050	1,060
13.								975	1,020	1,060	1,060	1,060
14.								976	1,040	1,050	1,060	1,060
15.								970	1,020	1,050	1,060	1,040
16.								966	1,020	1,050	1,060	1,040
17.								960	1,060	1,050	1,060	1,040
18.								956	1,060	1,040	1,060	1,040
19.								956	1,060	1,040	1,060	1,040
20.								1,020	1,040	1,040	1,060	1,040
21.								1,020	1,030	1,040	1,060	1,040
22.								1,010	1,020	1,040	1,060	1,040
23.								940	1,010	1,020	1,040	1,040
24.								940	1,010	1,000	1,040	1,060
25.								940	1,010	1,000	1,040	1,060
26.								940	1,010	1,080	1,040	1,060
27.								960	1,030	1,080	1,050	1,060
28.								960	1,040	1,070	1,050	1,060
29.								960	1,050	1,070	1,050	1,060
30.								960	992	1,070	1,050	1,060
31.								1,000	1,050	1,050	1,060	1,060

Daily discharge, in second-feet, of Deschutes River near Lava, Oreg., for 1905-1907, 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,030	1,030	1,430	1,030	1,030	1,140	1,180	1,220	1,200	1,150	1,130	1,100
2.....	1,030	1,020	1,330	1,030	1,030	1,190	1,180	1,220	1,180	1,150	1,130	1,100
3.....	1,030	1,020	1,330	1,030	1,030	1,200	1,200	1,250	1,180	1,150	1,130	1,100
4.....	1,030	1,010	1,330	1,030	1,030	1,210	1,200	1,260	1,180	1,150	1,130	1,080
5.....	1,030	1,010	1,330	1,030	1,030	1,220	1,190	1,250	1,180	1,150	1,130	1,080
6.....	1,030	1,010	1,230	1,030	1,030	1,250	1,180	1,220	1,180	1,150	1,130	1,080
7.....	1,030	1,010	1,180	1,030	1,030	1,250	1,160	1,220	1,180	1,140	1,130	1,080
8.....	1,030	1,010	1,180	1,030	1,030	1,220	1,160	1,220	1,180	1,140	1,130	1,080
9.....	1,030	1,010	1,180	1,030	1,030	1,220	1,160	1,220	1,150	1,140	1,130	1,080
10.....	1,020	1,010	1,180	1,030	1,030	1,220	1,160	1,280	1,150	1,140	1,130	1,080
11.....	1,020	1,010	1,180	1,030	1,030	1,200	1,160	1,280	1,180	1,140	1,130	1,080
12.....	1,020	996	1,180	1,030	1,010	1,200	1,160	1,260	1,180	1,140	1,130	1,080
13.....	1,020	996	1,160	1,030	1,010	1,200	1,160	1,200	1,160	1,140	1,130	1,080
14.....	1,010	985	1,160	1,030	1,010	1,220	1,160	1,250	1,160	1,140	1,100	1,080
15.....	1,010	985	1,160	1,030	1,010	1,220	1,160	1,240	1,160	1,140	1,100	1,080
16.....	1,010	996	1,130	1,030	1,010	1,220	1,160	1,240	1,160	1,140	1,100	1,080
17.....	1,010	1,000	1,100	1,030	1,010	1,220	1,180	1,220	1,160	1,140	1,100	1,080
18.....	1,010	1,010	1,080	1,030	1,010	1,220	1,180	1,220	1,160	1,140	1,100	1,080
19.....	1,010	1,010	1,080	1,030	1,010	1,220	1,180	1,210	1,160	1,140	1,100	1,080
20.....	1,010	1,100	1,080	1,030	1,010	1,220	1,190	1,200	1,160	1,140	1,100	1,080
21.....	1,010	1,100	1,080	1,030	1,010	1,220	1,190	1,200	1,160	1,140	1,100	1,080
22.....	1,010	1,240	1,060	1,030	1,010	1,220	1,200	1,200	1,160	1,140	1,100	1,080
23.....	1,010	1,370	1,060	1,030	1,010	1,220	1,200	1,200	1,160	1,140	1,100	1,080
24.....	1,010	1,370	1,070	1,030	1,010	1,250	1,200	1,200	1,160	1,140	1,100	1,080
25.....	1,010	1,630	1,080	1,030	1,010	1,240	1,200	1,200	1,160	1,130	1,100	1,060
26.....	1,010	1,700	1,080	1,030	1,010	1,220	1,210	1,200	1,150	1,130	1,100	1,060
27.....	1,010	1,660	1,000	1,030	1,030	1,200	1,220	1,200	1,150	1,130	1,100	1,060
28.....	1,010	1,580	1,000	1,030	1,060	1,200	1,220	1,200	1,150	1,130	1,100	1,060
29.....	1,010	1,500	1,000	1,030	.....	1,190	1,220	1,200	1,150	1,130	1,100	1,060
30.....	1,010	1,430	1,000	1,030	.....	1,180	1,220	1,200	1,140	1,130	1,100	1,060
31.....	1,030	.....	1,000	1,030	.....	1,180	.....	1,200	.....	1,130	1,100	.....

NOTE.—Daily discharge based on two well-defined rating curves, one applicable when discharge of East Fork at Allen's ranch is more than 400 second-feet, the other applicable when the discharge at Allen's is less than 400 second-feet.

Monthly discharge of Deschutes River near Lava, Oreg., for 1905-1907, 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
February 20-28.....	1,130	1,100	1,120	20,000	A.
March.....	1,150	1,080	1,120	68,900	A.
April.....	1,100	1,060	1,070	63,700	A.
May.....	1,080	1,060	1,060	65,200	A.
June.....	1,060	1,020	1,030	61,300	A.
July.....	1,010	974	988	60,800	A.
August.....	962	962	962	59,200	A.
September.....	974	916	934	55,600	A.
The period.....	.....	.....	.....	455,000	.....
1905-6.					
October.....	962	916	934	57,400	A.
November.....	904	870	890	53,000	A.
December.....	916	836	862	53,000	A.
January.....	916	814	836	51,400	A.
February.....	847	803	812	45,100	A.
March.....	858	781	814	50,100	A.
April.....	916	870	895	53,300	B.
May.....	960	890	926	56,900	B.
June.....	996	910	956	56,900	B.
July.....	950	939	947	58,200	A.
August.....	950	928	943	58,000	A.
September.....	962	916	928	55,200	A.
The year.....	996	781	895	648,000	.....

Monthly discharge of Deschutes River near Lava, Oreg., for 1905-1907, 1909-10—Contd.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906-7.					
October.....	939	904	924	56,800	A.
November.....	939	893	908	54,000	A.
December.....	939	847	899	55,300	A.
January.....	1,060	870	946	58,200	A.
February.....	1,060	939	990	55,000	B.
March.....	1,100	920	970	59,600	A.
April.....	1,080	1,020	1,040	61,900	A.
The period.....				401,000	
1909.					
April 23-30.....	960	940	950	15,100	
May.....	1,050	956	985	60,600	
June.....	1,080	1,000	1,040	61,900	
July.....	1,090	1,040	1,060	65,200	
August.....	1,060	1,050	1,000	65,200	
September.....	1,070	1,030	1,050	62,500	
The period.....				330,000	
1909-10.					
October.....	1,030	1,010	1,020	62,700	A.
November.....	1,700	985	1,160	69,000	A.
December.....	1,430	1,000	1,140	70,100	A.
January.....	1,030	1,030	1,030	63,300	B.
February.....	1,060	1,010	1,020	56,600	B.
March.....	1,250	1,140	1,210	74,400	B.
April.....	1,220	1,160	1,180	70,200	B.
May.....	1,280	1,200	1,220	75,000	B.
June.....	1,200	1,140	1,160	69,000	B.
July.....	1,150	1,130	1,140	70,100	A.
August.....	1,130	1,100	1,110	68,200	A.
September.....	1,100	1,060	1,080	64,300	A.
The year.....	1,700	985	1,120	813,000	

DESCHUTES RIVER AT WEST'S RANCH, NEAR LAVA, OREG.

Location.—At private bridge on B. F. West's ranch, in the SW. $\frac{1}{4}$ sec. 31, T. 19 S., R. 11 E., about 2 miles north of Lava, about 16 miles above Bend, and about 7 miles by river above Benham Falls, one-half mile below Spring Creek, and 2 miles below East Fork.

Records presented.—July 21, 1906, to February 20, 1909.

Drainage area.—Indeterminate.

Gage.—Vertical staff spiked to bridge approach; datum unchanged.

Channel.—Sand and gravel; somewhat shifting; affected by weeds. Gradient of river is very flat—less than 2 feet per mile.

Discharge measurements.—Made from private wagon bridge of logs and poles.

Winter flow.—Unaffected by ice.

Accuracy.—Results good.

As this station gives practically the same discharge as the station at Benham Falls, the tables of monthly discharge of the two have been combined (p. 322).

Discharge measurements of Deschutes River at West's ranch, near Lava, Oreg., in 1906-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Fect.</i>	<i>Sec.-ft.</i>	1908.		<i>Fect.</i>	<i>Sec.-f.</i>
Apr. 13	I. Landes.....	9.08	1,590	June 22	H. D. McGlashan.....	9.67	1,890
May 20	.....do.....	9.42	1,920	Oct. 25	R. B. Post.....	9.15	1,660
June 12	.....do.....	9.39	1,910	1909.			
20	Stevens and Landes.....	9.30	1,780	Jan. 2	R. B. Post.....	8.92	1,440
Aug. 23	C. W. Allen.....	8.85	1,400	Apr. 23	.....do.....	9.43	1,780
1907.				1910.			
Apr. 10	I. E. Oakes.....	9.60	2,120	Apr. 27	L. R. Allen.....	9.87	2,160
1908.							
Mar. 26	H. D. McGlashan.....	9.30	1,780				
Apr. 5	.....do.....	9.10	1,620				

Daily gage height, in feet, of Deschutes River at West's ranch near Lava, Oreg., for 1906-1909.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1906.											
1		8.90	8.80	11	8.90	8.80	21	9.00	8.85	8.80	
2		8.90	8.80	12	8.90	8.80	22	9.00	8.85	8.80	
3		8.90	8.80	13	8.90	8.82	23	8.98	8.85	8.80	
4		8.90	8.80	14	8.90	8.85	24	8.95	8.85	8.80	
5		8.90	8.80	15	8.85	8.85	25	8.95	8.85	8.80	
6		8.90	8.80	16	8.85	8.85	26	8.95	8.85	8.80	
7		8.90	8.80	17	8.85	8.85	27	8.95	8.85	8.80	
8		8.90	8.80	18	8.85	8.85	28	8.95	8.85	8.80	
9		8.90	8.80	19	8.85	8.85	29	8.95	8.80	8.80	
10		8.90	8.80	20	8.85	8.80	30	8.92	8.80	8.80	
							31	8.90	8.80		

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1	8.80	8.70	8.75	8.80	9.00	9.38	9.18	9.95	9.90	9.60	9.40	9.35
2	8.80	8.70	8.75	8.75	9.00	9.32	9.20	9.95	9.90	9.60	9.40	9.35
3	8.80	8.70	8.75	8.80	9.02	9.30	9.20	9.95	9.90	9.60	9.40	9.35
4	8.80	8.70	8.75	8.85	9.22	9.25	9.20	9.92	9.90	9.60	9.40	9.35
5	8.75	8.75	8.75	8.85	9.45	9.20	9.20	9.90	9.90	9.60	9.38	9.35
6	8.75	8.75	8.75	8.92	9.60	9.20	9.28	9.90	9.90	9.58	9.35	9.35
7	8.75	8.80	8.80	8.85	9.55	9.20	9.38	9.90	9.90	9.55	9.35	9.30
8	8.75	8.80	8.80	8.92	9.58	9.20	9.45	9.90	9.90	9.55	9.38	9.30
9	8.75	8.80	8.80	8.88	9.70	9.20	9.52	9.88	9.90	9.55	9.40	9.30
10	8.75	8.88	8.80	8.90	11.15	9.20	9.60	9.88	9.92	9.55	9.40	9.30
11	8.75	8.85	8.80	9.00	10.90	9.20	9.62	9.90	9.95	9.55	9.40	9.30
12	8.78	8.85	8.75	8.90	10.70	9.20	9.65	9.92	9.98	9.55	9.40	9.28
13	8.75	8.80	8.75	8.88	10.58	9.15	9.70	9.95	9.95	9.55	9.40	9.25
14	8.75	8.80	8.80	8.75	10.40	9.10	9.72	9.95	9.95	9.50	9.40	9.25
15	8.75	8.85	8.80	8.48	10.15	9.10	9.75	9.95	9.90	9.50	9.35	9.25
16	8.75	8.90	8.78	8.85	10.05	9.10	9.75	9.95	9.90	9.50	9.35	9.25
17	8.75	8.95	8.80	8.82	9.98	9.10	9.75	9.95	9.90	9.50	9.35	9.25
18	8.75	9.00	8.80	8.85	9.82	9.32	9.75	9.92	9.80	9.50	9.35	9.25
19	8.75	8.95	8.85	9.02	9.60	9.38	9.80	9.95	9.75	9.50	9.35	9.25
20	8.75	8.90	8.85	9.10	9.65	9.52	9.80	9.95	9.70	9.50	9.32	9.25
21	8.75	8.90	8.85	8.88	9.50	9.55	9.80	9.95	9.68	9.50	9.30	9.25
22	8.75	8.90	8.90	8.80	9.50	9.50	9.80	10.00	9.65	9.45	9.30	9.25
23	8.70	8.80	8.90	8.80	9.50	9.42	9.85	10.05	9.65	9.45	9.30	9.22
24	8.70	8.80	8.90	8.78	9.45	9.32	9.85	10.08	9.65	9.45	9.35	9.20
25	8.70	8.82	8.90	8.80	9.50	9.50	9.28	9.88	10.10	9.65	9.45	9.20
26	8.70	8.75	8.98	8.80	9.50	9.25	9.90	10.10	9.65	9.45	9.40	9.20
27	8.70	8.70	9.00	8.80	9.45	9.20	9.90	10.08	9.68	9.45	9.35	9.20
28	8.70	8.72	9.00	8.80	9.40	9.20	9.92	10.02	9.68	9.45	9.35	9.25
29	8.70	8.72	8.95	8.82		9.15	9.95	9.95	9.65	9.45	9.35	9.20
30	8.70	8.75	8.95	8.85		9.15	9.95	9.90	9.60	9.45	9.35	9.20
31	8.70		8.90	8.90		9.15		9.90		9.40	9.35	

Daily gage height, in feet, of Deschutes River at West's ranch, near Lava, Oreg., for 1906-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	9.20	9.10	9.08	9.55	8.70	8.90	9.10	9.60	9.40	9.45	9.25	9.15
2.....	9.15	9.10	9.05	9.55	8.92	8.88	9.05	9.58	9.40	9.45	9.25	9.15
3.....	9.15	9.05	9.02	9.45	8.90	8.85	9.05	9.55	9.40	9.44	9.25	9.15
4.....	9.15	9.05	9.00	9.45	8.95	8.85	9.08	9.55	9.40	9.45	9.20	9.15
5.....	9.15	9.05	9.05	9.40	8.95	8.85	9.10	9.55	9.40	9.45	9.20	9.15
6.....	9.15	9.05	9.05	9.28	9.00	8.85	9.10	9.55	9.35	9.45	9.20	9.15
7.....	9.15	9.05	9.00	9.25	9.00	8.82	9.10	9.60	9.35	9.40	9.20	9.15
8.....	9.15	9.05	9.05	9.30	8.98	8.80	9.05	9.60	9.38	9.40	9.20	9.15
9.....	9.15	9.05	9.05	9.30	8.95	8.82	9.08	9.60	9.40	9.40	9.20	9.10
10.....	9.15	9.05	9.05	9.22	8.95	8.82	9.12	9.60	9.42	9.40	9.20	9.10
11.....	9.15	9.05	9.05	9.25	8.95	8.85	9.12	9.60	9.45	9.40	9.20	9.10
12.....	9.15	9.05	9.08	9.25	8.90	8.90	9.18	9.55	9.48	9.40	9.15	9.10
13.....	9.15	9.00	9.15	9.18	8.85	8.92	9.28	9.55	9.50	9.45	9.15	9.10
14.....	9.15	9.05	9.00	9.25	8.88	9.02	9.30	9.58	9.52	9.50	9.20	9.15
15.....	9.10	9.05	8.95	9.25	8.90	9.20	9.38	9.60	9.55	9.45	9.20	9.15
16.....	9.10	9.05	8.95	9.20	8.90	9.35	9.45	9.60	9.55	9.45	9.15	9.15
17.....	9.10	9.05	9.00	9.15	8.92	9.42	9.45	9.60	9.55	9.40	9.15	9.15
18.....	9.10	9.00	9.00	9.15	8.95	9.45	9.45	9.60	9.60	9.40	9.15	9.15
19.....	9.10	9.00	9.00	9.15	8.98	9.40	9.50	9.55	9.60	9.35	9.15	9.10
20.....	9.10	9.02	9.00	9.15	8.88	9.30	9.50	9.55	9.62	9.35	9.15	9.10
21.....	9.10	9.05	9.05	9.15	8.80	9.20	9.60	9.52	9.65	9.35	9.15	9.10
22.....	9.10	9.05	9.40	8.98	8.90	9.20	9.60	9.48	9.65	9.40	9.15	9.10
23.....	9.08	9.05	9.55	9.05	8.85	9.20	9.65	9.45	9.65	9.45	9.15	9.10
24.....	9.10	9.10	9.75	9.05	8.85	9.22	9.70	9.40	9.60	9.38	9.15	9.05
25.....	9.10	9.10	9.85	9.08	8.85	9.28	9.70	9.40	9.50	9.35	9.15	9.05
26.....	9.10	9.15	10.00	9.05	8.88	9.30	9.70	9.40	9.50	9.30	9.15	9.05
27.....	9.10	9.20	9.85	9.02	8.92	9.30	9.70	9.35	9.48	9.30	9.15	9.05
28.....	9.10	9.20	9.80	9.00	8.95	9.20	9.70	9.35	9.45	9.30	9.15	9.05
29.....	9.10	9.15	9.70	8.98	8.90	9.20	9.65	9.35	9.45	9.30	9.15	9.05
30.....	9.10	9.10	9.55	9.02	-----	9.10	9.60	9.38	9.45	9.25	9.15	9.05
31.....	9.10	-----	9.55	8.85	-----	9.10	-----	9.40	-----	9.25	9.15	-----

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.
1908-9.						1908-9.					
1.....	9.05	9.10	-----	8.9	9.1	16.....	9.40	9.00	8.85	9.0	9.1
2.....	9.05	9.10	-----	8.9	9.1	17.....	9.40	9.00	8.85	9.02	9.25
3.....	9.05	9.10	9.00	8.9	9.2	18.....	9.40	9.00	8.50	9.7	9.25
4.....	9.05	9.10	9.00	8.95	9.2	19.....	9.38	9.00	8.60	9.75	9.25
5.....	9.05	9.05	9.00	8.95	9.15	20.....	9.30	9.08	8.80	9.3	9.25
6.....	9.05	9.05	9.00	8.85	9.1	21.....	9.28	9.15	8.95	9.5	-----
7.....	9.05	9.05	8.95	8.95	9.1	22.....	9.25	9.18	8.90	9.5	-----
8.....	9.05	9.02	8.95	9.0	9.05	23.....	9.20	9.20	8.90	9.45	-----
9.....	9.05	9.00	8.95	8.95	9.05	24.....	9.18	9.20	8.90	9.4	-----
10.....	9.05	9.00	8.92	8.8	9.0	25.....	9.15	9.15	8.85	9.4	-----
11.....	9.05	9.00	8.85	8.7	9.0	26.....	9.15	9.15	8.85	9.35	-----
12.....	9.05	9.00	8.90	8.88	9.0	27.....	9.10	9.00	8.85	9.35	-----
13.....	9.05	9.00	8.95	8.95	9.0	28.....	9.10	-----	8.90	9.25	-----
14.....	9.18	-----	8.88	9.0	9.0	29.....	9.10	-----	8.95	9.2	-----
15.....	9.40	9.00	8.82	9.0	9.0	30.....	9.10	-----	8.90	9.2	-----
						31.....	9.10	-----	8.90	9.1	-----

Daily discharge, in second-feet, of Deschutes River at West's ranch, near Lava, Oreg., for 1906-1909.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1906.				1906.				1906.			
1.....		1,430	1,360	11.....		1,430	1,360	21.....	1,510	1,400	1,360
2.....		1,430	1,360	12.....		1,430	1,360	22.....	1,510	1,400	1,360
3.....		1,430	1,360	13.....		1,430	1,370	23.....	1,490	1,400	1,360
4.....		1,430	1,360	14.....		1,430	1,400	24.....	1,470	1,400	1,360
5.....		1,430	1,360	15.....		1,400	1,400	25.....	1,470	1,400	1,360
6.....		1,430	1,360	16.....		1,400	1,400	26.....	1,470	1,400	1,360
7.....		1,430	1,360	17.....		1,400	1,400	27.....	1,470	1,400	1,360
8.....		1,430	1,360	18.....		1,400	1,400	28.....	1,470	1,400	1,360
9.....		1,430	1,360	19.....		1,400	1,400	29.....	1,470	1,360	1,360
10.....		1,430	1,360	20.....		1,400	1,360	30.....	1,450	1,360	1,360
								31.....	1,430	1,360	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1,360	1,290	1,320	1,350	1,520	1,880	1,680	2,500	2,450	2,120	1,900	1,850
2.....	1,360	1,290	1,320	1,320	1,520	1,820	1,700	2,500	2,450	2,120	1,900	1,850
3.....	1,360	1,290	1,320	1,350	1,540	1,800	1,700	2,500	2,450	2,120	1,900	1,850
4.....	1,360	1,290	1,320	1,390	1,720	1,750	1,700	2,470	2,450	2,120	1,900	1,850
5.....	1,320	1,320	1,320	1,390	1,960	1,700	1,700	2,450	2,450	2,120	1,880	1,850
6.....	1,320	1,320	1,320	1,450	2,120	1,700	1,780	2,450	2,450	2,100	1,850	1,850
7.....	1,320	1,360	1,360	1,390	2,060	1,700	1,880	2,450	2,450	2,060	1,850	1,800
8.....	1,320	1,360	1,360	1,450	2,100	1,700	1,960	2,450	2,450	2,060	1,880	1,800
9.....	1,320	1,360	1,360	1,410	2,230	1,700	2,030	2,430	2,450	2,060	1,900	1,800
10.....	1,320	1,420	1,360	1,430	4,000	1,700	2,120	2,430	2,470	2,060	1,900	1,800
11.....	1,320	1,400	1,360	1,520	3,680	1,700	2,140	2,450	2,500	2,060	1,900	1,800
12.....	1,350	1,400	1,320	1,430	3,420	1,700	2,180	2,470	2,540	2,060	1,900	1,780
13.....	1,320	1,360	1,320	1,410	3,260	1,660	2,230	2,500	2,500	2,060	1,900	1,750
14.....	1,320	1,360	1,360	1,320	3,040	1,610	2,250	2,500	2,500	2,010	1,900	1,750
15.....	1,320	1,400	1,360	1,160	2,740	1,610	2,280	2,500	2,450	2,010	1,850	1,750
16.....	1,320	1,430	1,350	1,390	2,620	1,610	2,280	2,500	2,450	2,010	1,850	1,750
17.....	1,320	1,470	1,360	1,370	2,540	1,610	2,280	2,500	2,450	2,010	1,850	1,750
18.....	1,320	1,510	1,360	1,390	2,360	1,820	2,280	2,470	2,340	2,010	1,850	1,750
19.....	1,320	1,470	1,400	1,540	2,120	1,880	2,340	2,500	2,280	2,010	1,850	1,750
20.....	1,320	1,430	1,400	1,610	2,060	2,030	2,340	2,500	2,230	2,010	1,820	1,750
21.....	1,320	1,430	1,400	1,410	2,010	2,060	2,340	2,500	2,210	2,010	1,800	1,750
22.....	1,320	1,430	1,430	1,350	2,010	2,010	2,340	2,560	2,180	1,960	1,800	1,750
23.....	1,290	1,360	1,430	1,350	2,010	1,920	2,400	2,620	2,180	1,960	1,800	1,720
24.....	1,290	1,360	1,430	1,340	1,960	1,820	2,400	2,660	2,180	1,960	1,850	1,700
25.....	1,290	1,370	1,430	1,350	2,010	1,780	2,430	2,680	2,180	1,960	1,850	1,700
26.....	1,290	1,320	1,490	1,350	2,010	1,750	2,450	2,680	2,180	1,960	1,900	1,700
27.....	1,290	1,290	1,510	1,350	1,960	1,700	2,450	2,660	2,210	1,960	1,850	1,700
28.....	1,290	1,300	1,510	1,350	1,900	1,700	2,470	2,580	2,210	1,960	1,850	1,750
29.....	1,290	1,300	1,470	1,370	.....	1,660	2,500	2,500	2,180	1,960	1,850	1,700
30.....	1,290	1,320	1,470	1,390	.....	1,660	2,500	2,450	2,120	1,960	1,850	1,700
31.....	1,290	.....	1,430	1,430	.....	1,660	.....	2,450	.....	1,900	1,850	.....

Daily discharge, in second-feet, of Deschutes River at West's ranch, near Lava, Oreg., for 1906-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1,700	1,610	1,590	2,060	1,280	1,430	1,610	2,120	1,900	1,960	1,750	1,660
2.....	1,660	1,610	1,590	2,060	1,450	1,410	1,560	2,100	1,900	1,960	1,750	1,660
3.....	1,660	1,560	1,540	1,960	1,430	1,390	1,560	2,060	1,900	1,960	1,750	1,660
4.....	1,660	1,560	1,520	1,960	1,480	1,390	1,590	2,060	1,900	1,960	1,700	1,660
5.....	1,660	1,560	1,560	1,900	1,480	1,390	1,610	2,060	1,900	1,960	1,700	1,660
6.....	1,660	1,560	1,560	1,780	1,520	1,390	1,610	2,060	1,850	1,960	1,700	1,660
7.....	1,660	1,560	1,520	1,750	1,520	1,370	1,610	2,120	1,850	1,900	1,700	1,660
8.....	1,660	1,560	1,560	1,800	1,500	1,350	1,560	2,120	1,880	1,900	1,700	1,660
9.....	1,660	1,560	1,560	1,800	1,480	1,370	1,590	2,120	1,900	1,900	1,700	1,610
10.....	1,660	1,560	1,560	1,720	1,480	1,370	1,630	2,120	1,920	1,900	1,700	1,610
11.....	1,660	1,560	1,560	1,750	1,480	1,390	1,630	2,120	1,960	1,900	1,700	1,610
12.....	1,660	1,560	1,590	1,750	1,430	1,430	1,680	2,060	1,900	1,900	1,660	1,610
13.....	1,660	1,520	1,660	1,680	1,390	1,450	1,780	2,060	2,010	1,960	1,660	1,610
14.....	1,660	1,560	1,520	1,750	1,410	1,540	1,800	2,100	2,030	2,010	1,700	1,660
15.....	1,610	1,560	1,480	1,750	1,430	1,700	1,880	2,120	2,060	1,960	1,700	1,660
16.....	1,610	1,560	1,480	1,700	1,430	1,850	1,960	2,120	2,060	1,960	1,660	1,660
17.....	1,610	1,560	1,520	1,660	1,450	1,920	1,960	2,120	2,060	1,900	1,660	1,660
18.....	1,610	1,520	1,520	1,660	1,480	1,960	1,960	2,120	2,120	1,900	1,660	1,660
19.....	1,610	1,520	1,520	1,660	1,500	1,900	2,010	2,060	2,120	1,850	1,660	1,610
20.....	1,610	1,540	1,520	1,660	1,410	1,800	2,010	2,060	2,140	1,850	1,660	1,610
21.....	1,610	1,560	1,560	1,660	1,350	1,700	2,120	2,030	2,180	1,850	1,660	1,610
22.....	1,610	1,560	1,900	1,500	1,430	1,700	2,120	1,990	2,180	1,900	1,660	1,610
23.....	1,590	1,560	2,060	1,560	1,390	1,700	2,180	1,960	2,180	1,960	1,660	1,610
24.....	1,610	1,610	2,280	1,560	1,390	1,720	2,230	1,900	2,120	1,880	1,660	1,560
25.....	1,610	1,610	2,400	1,590	1,390	1,780	2,230	1,900	2,010	1,850	1,660	1,560
26.....	1,610	1,660	2,560	1,560	1,410	1,800	2,230	1,900	2,010	1,800	1,660	1,560
27.....	1,610	1,700	2,400	1,540	1,450	1,800	2,230	1,850	1,990	1,800	1,660	1,560
28.....	1,610	1,700	2,340	1,520	1,480	1,700	2,230	1,850	1,960	1,800	1,660	1,560
29.....	1,610	1,660	2,230	1,500	1,430	1,700	2,180	1,850	1,960	1,800	1,660	1,560
30.....	1,610	1,610	2,060	1,540	-----	1,610	2,120	1,880	1,960	1,750	1,660	1,560
31.....	1,610	-----	2,060	1,390	-----	1,610	-----	1,900	-----	1,750	1,660	-----

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.
1908-9.						1908-9.					
1.....	1,560	1,610	1,520	1,430	1,610	16.....	1,900	1,520	1,390	1,520	1,610
2.....	1,560	1,610	1,520	1,430	1,610	17.....	1,900	1,520	1,390	1,540	1,750
3.....	1,560	1,610	1,520	1,430	1,700	18.....	1,900	1,520	1,170	2,230	1,750
4.....	1,560	1,610	1,520	1,480	1,700	19.....	1,880	1,520	1,220	2,280	1,750
5.....	1,560	1,560	1,520	1,480	1,660	20.....	1,800	1,590	1,350	1,800	1,750
6.....	1,560	1,560	1,520	1,390	1,610	21.....	1,780	1,660	1,480	2,010	-----
7.....	1,560	1,560	1,480	1,480	1,610	22.....	1,750	1,680	1,430	2,010	-----
8.....	1,560	1,540	1,480	1,520	1,560	23.....	1,700	1,700	1,430	1,960	-----
9.....	1,560	1,520	1,480	1,480	1,560	24.....	1,680	1,700	1,430	1,900	-----
10.....	1,560	1,520	1,450	1,350	1,520	25.....	1,660	1,660	1,390	1,900	-----
11.....	1,560	1,520	1,390	1,280	1,520	26.....	1,660	1,660	1,390	1,850	-----
12.....	1,560	1,520	1,430	1,410	1,520	27.....	1,610	1,520	1,390	1,850	-----
13.....	1,560	1,520	1,480	1,480	1,520	28.....	1,610	1,520	1,430	1,750	-----
14.....	1,680	1,520	1,410	1,520	1,520	29.....	1,610	1,520	1,480	1,700	-----
15.....	1,900	1,520	1,370	1,520	1,520	30.....	1,610	1,520	1,430	1,700	-----
						31.....	1,610	-----	1,430	1,610	-----

NOTE.—Daily discharge determined as follows:

1906. From well-defined rating curve.

1907 to 1909. From curve well defined between 1,400 and 2,200 second-feet, except for short periods, which may be affected by backwater, as indicated by the erratic plotting of some measurements.

DESCHUTES RIVER AT BENHAM FALLS, NEAR BEND, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 16, T. 19 S., R. 11 E., about 250 yards above Benham Falls, and 14 miles above Bend; above the more important irrigation diversions from Deschutes River, and just below the dam site of the proposed Benham Falls Reservoir.

Records presented.—March 30, 1909, to September 30, 1910. Records at this station are comparable with those at West's ranch, 17 miles upstream by river, July 21, 1906, to February 20, 1909.

Drainage area.—Indeterminate.

Gage.—Vertical staff driven into edge of stream on right bank. Maintenance of gage datum at times somewhat uncertain.

Channel.—Sandy; may shift slightly. Considerable growth of weeds along the right bank.

Discharge measurements.—Made from cable.

Winter flow.—Not seriously affected by ice.

Diversions.—The diversion of water by some small ditches that are taken out above this station has no appreciable effect on discharge.

Accuracy.—Rating curve well defined.

Cooperation.—Gage heights furnished by the Central Oregon Irrigation Co.

As this record has been used as a basis for all studies of the possibilities of power and irrigation development on Deschutes River between West Fork and Crooked and Metolius rivers, it has been extended by summing the discharges of the river at Bend and of diversions between Benham Falls and Bend for all periods from January 1, 1905, to September 30, 1910, not covered by records at West's ranch.

Discharge measurements of Deschutes River at Benham Falls, near Bend, Oreg., 1909-10.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1909. July 30	R. B. Post.....	<i>Fcet.</i> 4.00	<i>Sec.-ft.</i> 1,560	1910. June 21 Sept. 20	L. R. Allen..... Allen and Davenport..	<i>Fcet.</i> 4.35 4.06	<i>Sec.-ft.</i> 1,800 1,530
1910. Apr. 21	L. R. Allen.....	4.67	1,920				

Daily gage height, in feet, of Deschutes River at Benham Falls, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1							4.05	4.35	4.35	4.15	4.00	3.92
2							4.07	4.35	4.35	4.15	4.00	4.00
3							4.15	4.40	4.35	-----	4.00	4.00
4							4.20	4.40	4.35	-----	4.00	4.00
5							4.20	4.40	4.35	4.20	3.90	-----
6							4.13	4.40	4.35	4.15	3.99	3.98
7							4.09	4.40	4.40	4.15	3.99	3.98
8							4.05	4.40	4.40	4.15	-----	3.98
9							4.07	4.40	4.45	4.15	3.99	3.95
10							4.15	4.40	4.45	4.15	3.99	3.95
11							4.15	4.45	4.45	-----	3.97	3.95
12							4.17	4.45	4.45	4.10	-----	3.96
13							4.20	4.45	4.40	4.05	3.96	3.95
14							4.25	4.45	4.35	4.05	3.96	3.95
15							4.27	4.40	4.35	4.05	-----	3.95
16							4.30	4.35	4.35	4.05	3.97	3.90
17							4.30	4.35	4.35	4.05	3.95	3.90
18							4.30	4.30	4.40	-----	3.95	3.90
19							4.35	4.25	4.40	3.95	3.95	3.90
20							4.35	4.25	4.40	4.00	3.95	3.90
21							4.35	4.25	4.35	4.05	3.95	3.90
22							4.35	4.25	4.35	4.00	-----	3.90
23							4.35	4.25	4.30	4.00	3.95	3.90
24							4.30	4.20	4.25	4.00	3.95	3.90
25							4.30	4.30	4.25	-----	3.94	3.90
26							4.30	4.20	4.25	4.00	3.94	-----
27							4.33	4.20	4.20	4.00	3.93	3.95
28							4.35	4.25	4.20	4.00	3.93	3.95
29							4.35	4.30	4.20	4.00	-----	3.95
30						4.05	4.35	4.30	4.20	4.00	3.93	3.95
31						4.05	-----	4.30	-----	3.96	3.92	-----
1909-10.												
1	3.95	3.95	5.40	4.2	4.0	4.7	4.7	4.8	4.55	4.3	4.15	4.05
2	3.90	3.95	5.20	4.1	3.9	4.9	4.8	4.8	4.5	4.3	4.15	4.05
3	3.90	3.93	5.10	3.9	3.9	5.0	4.7	4.9	4.5	4.3	4.15	4.05
4	3.90	3.95	4.70	3.75	4.0	5.1	4.7	4.9	4.5	-----	4.1	4.05
5	3.90	3.95	4.40	3.75	4.1	5.2	4.8	4.9	4.5	4.3	4.1	4.05
6	3.90	3.95	3.95	3.85	4.0	5.2	4.7	4.9	4.5	4.3	4.1	4.05
7	3.90	-----	4.35	3.95	4.0	5.2	4.7	4.85	4.45	4.3	4.1	4.05
8	3.90	3.95	4.65	3.95	4.1	5.3	4.75	4.8	4.45	4.25	4.1	4.05
9	3.90	3.95	4.90	4.1	4.2	5.0	4.65	4.7	4.45	4.25	4.1	4.05
10	-----	3.95	4.90	4.2	4.2	4.9	4.65	4.8	4.4	4.2	4.1	4.0
11	3.90	3.95	4.80	4.2	4.2	4.9	4.75	4.9	4.4	4.2	4.1	4.0
12	3.90	3.90	4.80	4.3	4.3	4.8	4.65	4.85	4.4	4.2	4.1	4.0
13	3.85	3.90	4.80	4.1	4.1	4.8	4.65	4.85	4.4	4.2	4.1	4.0
14	3.85	3.85	4.80	4.1	4.1	4.8	4.65	4.85	4.4	4.2	4.1	4.05
15	3.85	3.80	4.60	4.2	4.2	4.9	4.75	4.85	4.4	4.2	4.1	4.05
16	3.85	3.75	4.50	4.1	4.2	-----	4.6	4.8	4.4	4.2	4.1	4.0
17	-----	3.85	4.40	4.0	4.2	-----	4.6	4.75	4.4	-----	4.1	4.0
18	3.85	3.85	4.40	4.0	4.4	4.8	4.6	4.75	4.4	4.2	4.1	4.0
19	3.85	3.95	4.30	4.1	4.3	4.9	4.7	4.7	4.4	4.2	4.1	4.0
20	3.85	4.10	4.30	4.0	4.2	4.8	4.7	4.7	4.4	4.2	4.1	4.05
21	3.85	4.30	4.30	4.0	4.3	4.8	4.6	4.65	4.4	4.2	4.1	4.05
22	3.85	4.60	4.30	4.0	4.2	4.8	4.65	4.65	4.4	4.2	4.1	4.05
23	3.90	4.90	4.30	4.2	4.2	4.9	4.7	4.6	4.4	4.2	4.1	4.05
24	3.90	5.40	4.30	4.2	4.2	4.9	4.7	4.6	4.4	4.2	4.05	4.0
25	3.90	-----	-----	4.2	4.3	4.9	4.75	4.6	4.4	4.2	4.05	4.0
26	3.90	-----	-----	4.4	4.2	4.9	4.75	4.6	4.35	4.2	4.05	4.0
27	3.85	-----	4.30	4.2	4.2	4.8	4.75	4.6	4.3	4.15	4.05	4.0
28	3.85	-----	4.30	4.2	4.6	4.8	4.8	4.6	4.3	4.15	4.05	4.0
29	3.80	5.40	4.20	4.2	-----	4.8	4.8	4.6	4.3	4.15	4.05	4.0
30	3.80	6.00	4.20	4.3	-----	4.8	4.8	4.55	4.3	4.15	4.05	4.0
31	3.80	-----	4.20	4.0	-----	4.7	-----	4.55	-----	4.15	4.05	-----

NOTE.—Gage heights Mar. 30 to July 31, 1909, are from the Deschutes Irrigation & Power Co.'s gage and have been reduced to the datum of the United States Geological Survey gage by adding 3.35 feet.

Daily discharge, in second-feet, of Deschutes River at Benham Falls, near Bend, Oreg., for 1905-6, 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1				2,220	2,380	2,080	2,260	2,080	1,880	1,630	1,730	1,600
2				2,220	2,380	2,080	2,110	2,080	1,880	1,750	1,660	1,630
3				2,220	2,380	2,080	2,210	2,080	1,880	1,740	1,740	1,630
4				2,220	2,380	2,080	2,110	2,080	1,890	1,700	1,600	1,640
5				2,220	2,380	2,080	2,210	2,080	1,880	1,700	1,600	1,630
6				2,220	2,380	2,100	2,080	2,080	1,860	1,700	1,600	1,640
7				2,220	2,220	2,100	2,080	2,080	1,870	1,630	1,600	1,620
8				2,220	2,220	2,100	2,080	2,080	1,840	1,630	1,740	1,630
9				2,220	2,220	2,100	2,080	2,080	1,840	1,730	1,660	1,600
10				2,220	2,220	2,100	2,080	2,080	1,850	1,730	1,740	1,590
11				2,220	2,080	2,110	2,080	2,080	1,870	1,740	1,660	1,600
12				2,080	2,080	2,110	2,080	2,080	1,870	1,730	1,740	1,610
13				2,080	2,080	2,110	2,080	2,080	1,880	1,720	1,660	1,610
14				2,080	2,220	2,100	2,080	2,080	1,880	1,730	1,600	1,640
15				2,080	2,380	2,100	2,080	2,080	1,870	1,630	1,500	1,630
16				2,080	2,220	2,130	2,080	2,220	1,730	1,720	1,600	1,640
17				2,220	1,920	2,130	2,080	2,220	1,730	1,730	1,600	1,640
18				2,220	1,920	2,130	2,080	2,080	1,730	1,720	1,490	1,630
19				2,220	1,920	2,130	2,080	1,880	1,730	1,700	1,600	1,630
20				2,220	1,920	2,230	2,080	1,880	1,790	1,740	1,590	1,630
21				2,220	2,080	2,230	2,080	1,880	1,790	1,740	1,590	1,630
22				2,220	2,080	2,240	2,080	1,880	1,740	1,630	1,590	1,630
23				2,220	2,080	2,250	2,080	1,880	1,740	1,740	1,590	1,630
24				2,220	2,080	2,250	2,080	1,880	1,740	1,740	1,590	1,630
25				2,220	2,080	2,250	2,080	1,880	1,740	1,740	1,610	1,600
26				2,220	2,080	2,250	1,920	1,880	1,740	1,660	1,620	1,600
27				2,380	2,080	2,250	1,920	1,880	1,740	1,730	1,610	1,620
28				2,380	2,080	2,260	1,920	1,880	1,730	1,730	1,610	1,600
29				2,540		2,260	1,920	1,880	1,740	1,630	1,610	1,640
30				2,700		2,260	2,080	1,880	1,740	1,730	1,610	1,640
31				2,380		2,260		1,880		1,730	1,610	
1905-6.												
1	1,640	1,620	1,290	1,320	1,320	1,260	1,700	1,820	1,740			
2	1,590	1,600	1,290	1,450	1,310	1,270	1,680	1,790	1,740			
3	1,530	1,610	1,290	1,330	1,300	1,300	1,540	1,850	1,740			
4	1,580	1,620	1,300	1,400	1,300	1,310	1,540	1,870	1,750			
5	1,590	1,620	1,320	1,360	1,260	1,290	1,540	1,870	1,760			
6	1,620	1,620	1,320	1,410	1,360	1,250	1,540	1,880	1,760			
7	1,620	1,620	1,320	1,420	1,340	1,350	1,540	1,840	1,900			
8	1,630	1,470	1,310	1,340	1,390	1,380	1,530	1,840	1,910			
9	1,600	1,480	1,320	1,320	1,260	1,390	1,670	1,880	1,920			
10	1,620	1,480	1,320	1,360	1,260	1,400	1,700	1,890	1,920			
11	1,620	1,480	1,300	1,350	1,250	1,320	1,720	1,910	1,920			
12	1,640	1,480	1,300	1,350	1,250	1,330	1,610	1,910	1,920			
13	1,640	1,480	1,280	1,200	1,240	1,330	1,580	1,920	1,920			
14	1,640	1,480	1,280	1,410	1,380	1,320	1,580	1,920	1,780			
15	1,640	1,480	1,250	1,410	1,410	1,320	1,580	1,920	1,780			
16	1,630	1,480	1,280	1,380	1,380	1,320	1,670	1,920	1,780			
17	1,630	1,620	1,280	1,320	1,360	1,320	1,860	1,920	1,750			
18	1,620	1,620	1,320	1,320	1,360	1,320	1,880	1,860	1,780			
19	1,620	1,620	1,320	1,320	1,360	1,320	1,820	1,860	1,780			
20	1,620	1,620	1,320	1,320	1,360	1,320	1,820	1,860	1,780			
21	1,620	1,620	1,320	1,320	1,360	1,320	1,810	1,860	1,780			
22	1,610	1,620	1,130	1,320	1,360	1,320	1,810	1,870	1,650			
23	1,600	1,620	1,080	1,320	1,360	1,320	1,790	1,730	1,650			
24	1,610	1,570	1,190	1,320	1,360	1,350	1,820	1,730	1,660			
25	1,610	1,550	1,320	1,410	1,360	1,390	1,820	1,730	1,670			
26	1,630	1,580	1,360	1,420	1,360	1,540	1,820	1,730	1,670			
27	1,660	1,620	1,370	1,420	1,340	1,550	1,830	1,750	1,670			
28	1,610	1,480	1,340	1,420	1,340	1,510	1,830	1,750	1,670			
29	1,610	1,480	1,320	1,410		1,520	1,860	1,770	1,670			
30	1,610	1,480	1,320	1,310		1,520	1,860	1,780	1,670			
31	1,620		1,320	1,310		1,520		1,700				

Daily discharge, in second-feet, of Deschutes River at Benham Falls, near Bend, Oreg., for 1905-6, 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1						1,590	1,590	1,800	1,800	1,660	1,560	1,510
2						1,590	1,610	1,800	1,800	1,660	1,560	1,560
3						1,690	1,840	1,840	1,800	1,670	1,560	1,560
4						1,750	1,690	1,840	1,800	1,680	1,560	1,560
5						1,620	1,690	1,840	1,800	1,690	1,550	1,560
6						1,590	1,640	1,840	1,800	1,660	1,550	1,550
7						1,570	1,620	1,840	1,840	1,660	1,550	1,550
8						1,530	1,590	1,840	1,840	1,660	1,550	1,550
9						1,560	1,610	1,840	1,870	1,660	1,550	1,530
10						1,530	1,660	1,840	1,870	1,660	1,550	1,530
11						1,530	1,660	1,870	1,870	1,640	1,540	1,530
12						1,530	1,670	1,870	1,870	1,620	1,530	1,530
13						1,520	1,690	1,870	1,840	1,590	1,530	1,530
14						1,530	1,720	1,870	1,800	1,590	1,530	1,530
15						1,530	1,740	1,840	1,800	1,590	1,540	1,530
16						1,580	1,760	1,800	1,800	1,590	1,540	1,500
17						1,580	1,760	1,800	1,800	1,590	1,530	1,500
18						1,600	1,760	1,760	1,840	1,560	1,530	1,500
19						1,580	1,800	1,720	1,840	1,530	1,530	1,500
20						1,560	1,800	1,720	1,840	1,560	1,530	1,500
21					1,750	1,550	1,800	1,720	1,800	1,590	1,530	1,500
22					1,620	1,550	1,800	1,720	1,800	1,560	1,530	1,500
23					1,610	1,550	1,800	1,720	1,760	1,560	1,530	1,500
24					1,610	1,540	1,760	1,690	1,720	1,560	1,530	1,500
25					1,560	1,550	1,760	1,760	1,720	1,560	1,520	1,500
26					1,600	1,560	1,760	1,690	1,720	1,560	1,520	1,520
27					1,600	1,550	1,690	1,690	1,690	1,560	1,510	1,530
28					1,590	1,570	1,800	1,720	1,690	1,560	1,510	1,530
29						1,550	1,800	1,760	1,690	1,560	1,510	1,530
30						1,590	1,800	1,760	1,690	1,560	1,510	1,530
31						1,590	1,760	1,760	1,690	1,530	1,510	1,530
1909-10.												
1	1,530	1,530	2,610	1,600	1,480	1,950	1,950	2,020	1,840	1,670	1,570	1,510
2	1,500	1,530	2,450	1,540	1,420	2,090	2,020	2,020	1,810	1,670	1,570	1,510
3	1,500	1,510	2,370	1,420	1,420	2,160	1,950	2,090	1,810	1,670	1,570	1,510
4	1,500	1,530	2,060	1,330	1,480	2,230	1,950	2,090	1,810	1,670	1,540	1,510
5	1,500	1,530	1,840	1,330	1,540	2,300	2,020	2,090	1,810	1,670	1,540	1,510
6	1,500	1,530	1,530	1,390	1,480	2,300	1,950	2,090	1,810	1,670	1,540	1,510
7	1,500	1,530	1,800	1,450	1,480	2,300	1,950	2,060	1,780	1,670	1,540	1,510
8	1,500	1,530	2,020	1,450	1,540	2,380	1,980	2,020	1,780	1,640	1,540	1,510
9	1,500	1,530	2,210	1,540	1,600	2,160	1,920	1,950	1,780	1,640	1,540	1,510
10	1,500	1,530	2,210	1,600	1,600	2,090	1,920	2,020	1,740	1,600	1,540	1,480
11	1,500	1,530	2,140	1,600	1,600	2,090	1,980	2,090	1,740	1,600	1,540	1,480
12	1,500	1,500	2,140	1,670	1,670	2,020	1,920	2,060	1,740	1,600	1,540	1,480
13	1,460	1,500	2,140	1,540	1,540	2,020	1,920	2,060	1,740	1,600	1,540	1,480
14	1,460	1,460	2,140	1,540	1,540	2,020	1,920	2,060	1,740	1,600	1,540	1,480
15	1,460	1,430	1,980	1,600	1,600	2,090	1,980	2,060	1,740	1,600	1,540	1,510
16	1,460	1,400	1,910	1,540	1,600	2,090	1,880	2,020	1,740	1,600	1,540	1,480
17	1,460	1,460	1,840	1,480	1,600	2,020	1,880	1,980	1,740	1,600	1,540	1,480
18	1,460	1,460	1,840	1,480	1,740	2,020	1,880	1,980	1,740	1,600	1,540	1,480
19	1,460	1,530	1,760	1,540	1,670	2,090	1,950	1,950	1,740	1,600	1,540	1,480
20	1,460	1,620	1,760	1,480	1,600	2,020	1,950	1,950	1,740	1,600	1,540	1,510
21	1,460	1,760	1,760	1,480	1,670	2,020	1,880	1,920	1,740	1,600	1,540	1,510
22	1,460	1,980	1,760	1,480	1,600	2,020	1,920	1,920	1,740	1,600	1,540	1,510
23	1,500	2,210	1,760	1,600	1,600	2,090	1,950	1,880	1,740	1,600	1,540	1,510
24	1,500	2,610	1,760	1,600	1,600	2,090	1,950	1,880	1,740	1,600	1,510	1,480
25	1,500	3,010	1,760	1,600	1,670	2,090	1,980	1,880	1,740	1,600	1,510	1,480
26	1,500	4,510	1,760	1,740	1,600	2,090	1,980	1,880	1,700	1,600	1,510	1,480
27	1,460	4,760	1,760	1,600	1,600	2,020	1,980	1,880	1,670	1,570	1,510	1,480
28	1,460	4,400	1,760	1,600	1,880	2,020	2,020	1,880	1,670	1,570	1,510	1,480
29	1,430	2,610	1,690	1,600	.....	2,020	2,020	1,880	1,670	1,570	1,510	1,480
30	1,430	3,120	1,690	1,670	.....	2,020	2,020	1,840	1,670	1,570	1,510	1,480
31	1,430	.....	1,690	1,480	.....	1,950	.....	1,840	.....	1,570	1,510	.....

NOTE.—Daily discharge determined as follows: Jan. 1, 1905, to June 30, 1906, and Feb. 20 to Mar. 29, 1909, by adding the discharge of Deschutes River at Bend and of Central Oregon and Pilot Butte canals; Mar. 30 to Dec. 31, 1909, from rating curve well defined between 1,400 and 1,800 second-feet; 1910, from a rating curve well defined between 1,400 and 2,000 second-feet.

Monthly discharge of Deschutes River at Benham Falls and West's ranch, Oreg., for 1905-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
January.....	2,700	2,080	2,240	138,000	A.
February.....	2,380	1,920	2,160	120,000	A.
March.....	2,260	2,080	2,160	133,000	A.
April.....	2,260	1,920	2,070	123,000	B.
May.....	2,220	1,880	2,010	124,000	B.
June.....	1,890	1,730	1,810	108,000	A.
July.....	1,750	1,630	1,710	105,000	A.
August.....	1,740	1,490	1,620	99,600	A.
September.....	1,640	1,590	1,620	96,400	A.
The period.....				1,050,000	
1905-6.					
October.....	1,660	1,530	1,620	99,600	A.
November.....	1,620	1,470	1,560	92,800	B.
December.....	1,370	1,080	1,290	79,300	A.
January.....	1,450	1,200	1,360	83,600	A.
February.....	1,410	1,240	1,330	73,900	A.
March.....	1,550	1,250	1,360	83,600	A.
April.....	1,880	1,530	1,710	102,000	B.
May.....	1,920	1,700	1,840	113,000	B.
June.....	1,920	1,650	1,770	105,000	B.
July ^a		1,430	1,560	95,900	B.
August.....	1,430	1,360	1,410	86,700	A.
September.....	1,400	1,360	1,370	81,500	A.
The year.....	1,920	1,080	1,520	1,100,000	
1906-7.					
October.....	1,360	1,290	1,320	81,200	B.
November.....	1,510	1,290	1,370	81,500	B.
December.....	1,510	1,320	1,390	85,500	B.
January.....	1,610	1,160	1,390	85,500	B.
February.....	4,000	1,520	2,300	128,000	A.
March.....	2,060	1,610	1,750	108,000	A.
April.....	2,500	1,680	2,170	129,000	A.
May.....	2,680	2,430	2,510	154,000	A.
June.....	2,540	2,120	2,350	140,000	A.
July.....	2,120	1,900	2,020	124,000	A.
August.....	1,900	1,800	1,860	114,000	A.
September.....	1,850	1,700	1,770	105,000	A.
The year.....	4,000	1,160	1,840	1,340,000	
1907-8.					
October.....	1,700	1,590	1,630	100,000	A.
November.....	1,700	1,520	1,580	94,000	A.
December.....	2,560	1,480	1,770	109,000	A.
January.....	2,060	1,390	1,700	105,000	A.
February.....	1,520	1,280	1,440	82,800	A.
March.....	1,960	1,350	1,600	98,400	A.
April.....	2,230	1,590	1,880	112,000	A.
May.....	2,120	1,850	2,030	125,000	A.
June.....	2,180	1,850	2,000	119,000	A.
July.....	2,010	1,750	1,890	116,000	A.
August.....	1,750	1,660	1,650	103,000	A.
September.....	1,660	1,560	1,620	96,400	A.
The year.....	2,560	1,280	1,740	1,260,000	
1908-9.					
October.....	1,900	1,560	1,660	102,000	A.
November.....	1,700	1,520	1,570	93,400	A.
December.....	1,520	1,170	1,430	87,900	A.
January.....	2,280	1,280	1,650	101,000	A.
February.....	1,750	1,520	1,620	90,000	B.
March.....	1,750	1,520	1,570	96,500	A.
April.....	1,800	1,590	1,720	102,000	A.
May.....	1,870	1,690	1,790	110,000	A.
June.....	1,870	1,690	1,790	107,000	A.
July.....	1,690	1,530	1,600	98,400	A.
August.....	1,560	1,510	1,530	94,100	A.
September.....	1,560	1,500	1,520	90,400	A.
The year.....	2,280	1,170	1,620	1,170,000	

^a Discharge July 1-20, 1906, interpolated.

Monthly discharge of Deschutes River at Benham Falls and West's ranch, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	1,530	1,430	1,480	91,000	A.
November.....	4,760	1,400	2,040	121,000	B.
December.....	2,610	1,530	1,930	119,000	B.
January.....	1,740	1,330	1,530	94,100	A.
February.....	1,880	1,420	1,590	88,300	A.
March.....	2,380	1,950	2,090	129,000	A.
April.....	2,020	1,880	1,950	116,000	A.
May.....	2,090	1,840	1,980	122,000	A.
June.....	1,840	1,670	1,750	104,000	A.
July.....	1,670	1,570	1,610	99,000	A.
August.....	1,570	1,510	1,540	94,700	A.
September.....	1,510	1,480	1,500	89,300	A.
The year.....	4,760	1,330	1,750	1,270,000	

DESCHUTES RIVER AT SIZEMORE'S BRIDGE, NEAR BEND, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 5, T. 18 S., R. 12 E., $1\frac{1}{4}$ miles south of Bend, at a wagon bridge known as Sizemore's bridge.

Records presented.—December 22, 1904, to March 30, 1907.

Drainage area.—Indeterminate.

Gage.—Vertical staff spiked to bent of bridge.

Channel.—Rock and gravel; practically permanent, but gage heights subject to backwater from logs.

Discharge measurements.—Made from bridge.

Winter flow.—Not seriously affected by ice.

Diversions.—The Pilot Butte and Central Oregon canals divert water above station; records of diversion available (see pp. 331-346). No other important diversions.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by Deschutes Irrigation & Power Co.

Discharge measurements of Deschutes River at Sizemore's bridge, near Bend, Oreg., for 1904-1907.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Dec. 21	W. C. Sawyer.....	2.00	2,410	Oct. 27	Ivan Landes.....	1.50	1,490
				Nov. 15	.....do.....	1.40	1,350
1905.				Dec. 7	.....do.....	1.40	1,210
Feb. 7	Ivan Landes.....	2.00	2,100	1906.			
Mar. 6	.....do.....	1.95	2,170	Apr. 19	Ivan Landes.....	1.78	1,680
Apr. 20	.....do.....	1.90	2,050	June 19	J. C. Stevens.....	2.11	1,880
May 21	.....do.....	1.69	1,890	1907.			
Aug. 10	.....do.....	1.55	1,590	Apr. 4	I. E. Oakes.....	1.65	1,650
Sept. 22	.....do.....	1.46	1,520				

Daily gage height, in feet, of Deschutes River at Sizemore's bridge, near Bend, Oreg., for 1904-1907.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1				2.0	2.1	1.9	2.0	1.9	1.7	1.6	1.6	1.5
2				2.0	2.1	1.9	1.9	1.9	1.7	1.6	1.6	1.5
3				2.0	2.1	1.9	1.9	1.9	1.7	1.6	1.6	1.5
4				2.0	2.1	1.9	1.9	1.9	1.7	1.6	1.5	1.5
5				2.0	2.1	1.9	1.9	1.9	1.7	1.6	1.5	1.5
6				2.0	2.1	1.9	1.9	1.9	1.7	1.6	1.5	1.5
7				2.0	2.0	1.9	1.9	1.9	1.7	1.6	1.5	1.5
8				2.0	2.0	1.9	1.9	1.9	1.7	1.6	1.6	1.5
9				2.0	2.0	1.9	1.9	1.9	1.7	1.6	1.6	1.5
10				2.0	2.0	1.9	1.9	1.9	1.7	1.6	1.6	1.5
11				2.0	1.9	1.9	1.9	1.9	1.7	1.6	1.6	1.5
12				1.9	1.9	1.9	1.9	1.9	1.7	1.6	1.6	1.5
13				1.9	1.9	1.9	1.9	1.9	1.7	1.6	1.6	1.5
14				1.9	2.0	1.9	1.9	1.9	1.7	1.6	1.5	1.5
15				1.9	2.1	1.9	1.9	1.9	1.7	1.6	1.5	1.5
16				1.9	2.0	1.9	1.9	2.0	1.6	1.6	1.5	1.5
17				2.0	1.8	1.9	1.9	2.0	1.6	1.6	1.5	1.5
18				2.0	1.8	1.9	1.9	1.9	1.6	1.6	1.5	1.5
19				2.0	1.8	1.9	1.9	1.7	1.6	1.6	1.5	1.5
20				2.0	1.8	2.0	1.9	1.7	1.7	1.6	1.5	1.5
21			2.0	2.0	1.9	2.0	1.9	1.7	1.7	1.6	1.5	1.5
22			2.0	2.0	1.9	2.0	1.9	1.7	1.6	1.6	1.5	1.5
23			2.0	2.0	1.9	2.0	1.9	1.7	1.6	1.6	1.5	1.5
24			2.0	2.0	1.9	2.0	1.9	1.7	1.6	1.6	1.5	1.5
25			2.0	2.0	1.9	2.0	1.9	1.7	1.6	1.6	1.5	1.5
26			2.0	2.0	1.9	2.0	1.8	1.7	1.6	1.6	1.5	1.5
27			1.9	2.1	1.9	2.0	1.8	1.7	1.6	1.6	1.5	1.5
28			1.9	2.1	1.9	2.0	1.8	1.7	1.6	1.6	1.5	1.5
29			2.0	2.2		2.0	1.8	1.7	1.6	1.6	1.5	1.5
30			2.0	2.3		2.0	1.9	1.7	1.6	1.6	1.5	1.5
31			2.0	2.1		2.0		1.7		1.6	1.5	
1905-6.												
1	1.5	1.5	1.4	1.5	1.4	1.4	1.7	2.0	2.1	2.0	1.4	1.4
2	1.5	1.5	1.4	1.6	1.4	1.4	1.7	2.0	2.1	2.0	1.4	1.4
3	1.5	1.5	1.4	1.5	1.4	1.4	1.6	2.0	2.1	2.0	1.4	1.4
4	1.5	1.5	1.4	1.5	1.4	1.4	1.6	2.0	2.1	2.0	1.4	1.4
5	1.5	1.5	1.4	1.5	1.4	1.4	1.6	2.0	2.1	2.0	1.4	1.4
6	1.5	1.5	1.4	1.5	1.5	1.4	1.6	2.0	2.1	2.0	1.4	1.4
7	1.5	1.5	1.4	1.5	1.5	1.5	1.6	2.0	2.2	2.0	1.4	1.4
8	1.5	1.4	1.4	1.5	1.5	1.5	1.6	2.0	2.2	1.9	1.4	1.4
9	1.5	1.4	1.4	1.5	1.4	1.5	1.7	2.0	2.2	1.9	1.4	
10	1.5	1.4	1.4	1.5	1.4	1.5	1.7	2.1	2.2	1.9	1.4	
11	1.5	1.4	1.4	1.5	1.4	1.5	1.7	2.1	2.2	1.9	1.4	
12	1.5	1.4	1.4	1.5	1.4	1.5	1.6	2.2	2.2	1.9	1.4	
13	1.5	1.4	1.4	1.4	1.4	1.5	1.6	2.2	2.2	1.9	1.4	
14	1.5	1.4	1.4	1.5	1.5	1.5	1.6	2.2	2.1	1.9	1.4	
15	1.5	1.4	1.4	1.5	1.5	1.5	1.6	2.2	2.1	1.9	1.4	
16	1.5	1.4	1.4	1.5	1.5	1.5	1.7	2.2	2.1	1.9	1.4	
17	1.5	1.5	1.4	1.5	1.5	1.5	1.8	2.2	2.1	1.9	1.4	
18	1.5	1.5	1.4	1.5	1.5	1.5	1.8	2.2	2.1	1.9	1.4	
19	1.5	1.5	1.4	1.5	1.5	1.5	1.8	2.2	2.1	1.9	1.3	
20	1.5	1.5	1.4	1.5	1.5	1.5	1.8	2.2	2.1	1.8	1.3	
21	1.5	1.5	1.4	1.5	1.5	1.5	1.8	2.2	2.1	1.8	1.3	
22	1.5	1.5	1.3	1.5	1.5	1.5	1.8	2.2	2.0	1.7	1.3	
23	1.5	1.5	1.3	1.5	1.5	1.5	1.9	2.1	2.0	1.6	1.3	
24	1.5	1.5	1.4	1.5	1.5	1.5	1.9	2.1	2.0	1.6	1.3	
25	1.5	1.5	1.5	1.5	1.5	1.5	1.9	2.1	2.0	1.5	1.3	
26	1.5	1.5	1.5	1.5	1.5	1.6	1.9	2.1	2.0	1.5	1.4	
27	1.5	1.5	1.5	1.5	1.5	1.6	2.0	2.1	2.0	1.4	1.4	
28	1.5	1.4	1.5	1.5	1.5	1.6	1.9	2.1	2.0	1.4	1.4	
29		1.4	1.5	1.5		1.6	1.9	2.1	2.0	1.4	1.4	
30		1.4	1.5	1.4		1.6	1.9	2.1	2.0	1.4	1.4	
31			1.5	1.4		1.6		2.1		1.4	1.4	

Daily gage height, in feet, of Deschutes River at Sizemore's bridge, near Bend, Oreg., for 1904-1907—Continued.

Day.	Jan.	Feb.	Mar.	Day.	Jan.	Feb.	Mar.	Day.	Jan.	Feb.	Mar.
1907.				1907.				1907.			
1.....		1.6	1.7	11.....		2.45	1.7	21.....	1.55	1.8	1.8
2.....		1.55	1.7	12.....		2.35	1.65	22.....	1.5	1.8	1.8
3.....		1.55	1.7	13.....		2.25	1.65	23.....	1.5	1.8	1.8
4.....		1.7	1.7	14.....		2.25	1.6	24.....	1.5	1.8	1.8
5.....		1.85	1.7	15.....		2.1	1.6	25.....	1.5	1.8	1.75
6.....		1.9	1.7	16.....		2.0	1.6	26.....	1.5	1.8	1.7
7.....		1.9	1.7	17.....		2.0	1.6	27.....	1.5	1.8	1.7
8.....		1.9	1.7	18.....	1.6	1.9	1.65	28.....	1.5	1.75	1.7
9.....		1.9	1.7	19.....	1.6	1.8	1.7	29.....	1.5		1.65
10.....		2.25	1.7	20.....	1.65	1.8	1.8	30.....	1.5		1.6
								31.....	1.5		

Daily discharge, in second-feet, of Deschutes River at Sizemore's bridge, near Bend, Oreg., for 1904-1906.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....				2,220	2,380	2,080	2,220	2,080	1,780	1,630	1,630	1,490
2.....				2,220	2,380	2,080	2,080	2,080	1,780	1,630	1,630	1,490
3.....				2,220	2,380	2,080	2,080	2,080	1,780	1,630	1,630	1,490
4.....				2,220	2,380	2,080	2,080	2,080	1,780	1,630	1,490	1,490
5.....				2,220	2,380	2,080	2,080	2,080	1,780	1,630	1,490	1,490
6.....				2,220	2,380	2,080	2,080	2,080	1,780	1,630	1,490	1,490
7.....				2,220	2,220	2,080	2,080	2,080	1,780	1,630	1,490	1,490
8.....				2,220	2,220	2,080	2,080	2,080	1,780	1,630	1,630	1,490
9.....				2,220	2,220	2,080	2,080	2,080	1,780	1,630	1,630	1,490
10.....				2,220	2,220	2,080	2,080	2,080	1,780	1,630	1,630	1,490
11.....				2,220	2,080	2,080	2,080	2,080	1,780	1,630	1,630	1,490
12.....				2,080	2,080	2,080	2,080	2,080	1,780	1,630	1,630	1,490
13.....				2,080	2,080	2,080	2,080	2,080	1,780	1,630	1,630	1,490
14.....				2,080	2,220	2,080	2,080	2,080	1,780	1,630	1,490	1,490
15.....				2,080	2,380	2,080	2,080	2,080	1,780	1,630	1,490	1,490
16.....				2,080	2,220	2,080	2,080	2,220	1,630	1,630	1,490	1,490
17.....				2,220	1,920	2,080	2,080	2,220	1,630	1,630	1,490	1,490
18.....				2,220	1,920	2,080	2,080	2,080	1,630	1,630	1,490	1,490
19.....				2,220	1,920	2,080	2,080	1,780	1,630	1,630	1,490	1,490
20.....				2,220	1,920	2,220	2,080	1,780	1,630	1,630	1,490	1,490
21.....												
22.....				2,220	2,220	2,080	2,220	2,080	1,780	1,630	1,630	1,490
23.....				2,220	2,220	2,080	2,220	2,080	1,780	1,630	1,630	1,490
24.....				2,220	2,220	2,080	2,220	2,080	1,780	1,630	1,630	1,490
25.....				2,220	2,220	2,080	2,220	2,080	1,780	1,630	1,630	1,490
26.....												
27.....				2,220	2,220	2,080	2,220	1,920	1,780	1,630	1,630	1,490
28.....				2,080	2,380	2,080	2,220	1,920	1,780	1,630	1,630	1,490
29.....				2,220	2,540		2,220	1,920	1,780	1,630	1,630	1,490
30.....				2,220	2,700		2,220	2,080	1,780	1,630	1,630	1,490
31.....				2,220	2,380		2,220	1,780	1,630	1,630	1,490	

Daily discharge, in second-feet, of Deschutes River at Sizemore's bridge, near Bend, Oreg., for 1904-1906—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	1,490	1,490	1,190	1,320	1,190	1,190	1,590	1,730	1,600			
2	1,490	1,490	1,190	1,450	1,190	1,190	1,590	1,730	1,600			
3	1,490	1,490	1,190	1,320	1,190	1,190	1,450	1,730	1,600			
4	1,490	1,490	1,190	1,320	1,190	1,190	1,450	1,730	1,600			
5	1,490	1,490	1,190	1,320	1,190	1,190	1,450	1,730	1,600			
6	1,490	1,490	1,190	1,320	1,320	1,190	1,450	1,740	1,600			
7	1,490	1,490	1,190	1,320	1,320	1,320	1,450	1,740	1,740			
8	1,490	1,350	1,190	1,320	1,320	1,320	1,450	1,740	1,740			
9	1,490	1,350	1,190	1,320	1,190	1,320	1,590	1,740	1,740			
10	1,490	1,350	1,190	1,320	1,190	1,320	1,590	1,740	1,740			
11	1,490	1,350	1,190	1,320	1,190	1,320	1,590	1,740	1,740			
12	1,490	1,350	1,190	1,320	1,190	1,320	1,450	1,740	1,740			
13	1,490	1,350	1,190	1,190	1,190	1,320	1,450	1,740	1,740			
14	1,490	1,350	1,190	1,320	1,320	1,320	1,450	1,740	1,600			
15	1,490	1,350	1,190	1,320	1,320	1,320	1,450	1,740	1,600			
16	1,490	1,350	1,190	1,320	1,320	1,320	1,590	1,740	1,600			
17	1,490	1,490	1,190	1,320	1,320	1,320	1,730	1,740	1,600			
18	1,490	1,490	1,190	1,320	1,320	1,320	1,730	1,740	1,600			
19	1,490	1,490	1,190	1,320	1,320	1,320	1,730	1,740	1,600			
20	1,490	1,490	1,190	1,320	1,320	1,320	1,730	1,740	1,600			
21	1,490	1,490	1,190	1,320	1,320	1,320	1,730	1,740	1,600			
22	1,490	1,490	1,070	1,320	1,320	1,320	1,730	1,740	1,460			
23	1,490	1,490	1,070	1,320	1,320	1,320	1,730	1,600	1,460			
24	1,490	1,490	1,190	1,320	1,320	1,320	1,730	1,600	1,460			
25	1,490	1,490	1,320	1,320	1,320	1,320	1,730	1,600	1,460			
26	1,490	1,490	1,320	1,320	1,320	1,450	1,730	1,600	1,460			
27	1,490	1,490	1,320	1,320	1,320	1,450	1,730	1,600	1,460			
28	1,490	1,350	1,320	1,320	1,320	1,450	1,730	1,600	1,460			
29	1,490	1,350	1,320	1,320		1,450	1,730	1,600	1,460			
30	1,490	1,350	1,320	1,190		1,450	1,730	1,600	1,460			
31	1,490		1,320	1,190		1,450		1,600				

NOTE.—Daily discharge determined as follows: Dec. 21, 1904, to Nov. 30, 1905, from well defined rating curve; Dec. 1, 1905, to Apr. 20, 1906, from curve well defined above 1,200 second-feet; Apr. 21 to May 19, 1906, interpolated; May 20 to June 30, 1906, from curve well defined by measurements at West's ranch reduced to allow for diversions above Bend. Discharge not computed after July 1, 1906.

Monthly discharge of Deschutes River at Sizemore's bridge, near Bend, Oreg., for 1904-1906.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
December 21-31	2,220	2,080	2,190	47,800	
January	2,700	2,080	2,240	138,000	A.
February	2,380	1,920	2,160	120,000	A.
March	2,220	2,080	2,130	131,000	A.
April	2,220	1,920	2,060	123,000	A.
May	2,220	1,780	1,960	121,000	A.
June	1,780	1,630	1,720	102,000	A.
July	1,630	1,630	1,630	100,000	A.
August	1,630	1,490	1,530	94,100	A.
September	1,490	1,490	1,490	88,700	A.
The period				1,070,000	
1905-6.					
October	1,490	1,490	1,490	91,600	A.
November	1,490	1,350	1,430	85,100	B.
December	1,320	1,070	1,210	74,400	A.
January	1,450	1,190	1,310	80,600	A.
February	1,320	1,190	1,270	70,500	A.
March	1,450	1,190	1,320	81,200	A.
April	1,730	1,450	1,610	95,800	B.
May	1,740	1,600	1,700	105,000	B.
June	1,740	1,460	1,590	94,600	B.
The period				779,000	

DESCHUTES RIVER AT BEND, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 32, T. 17 S., R. 12 E., just below the power house of the Bend Electric Light & Power Co., at city pumping plant at Bend, 1 mile above the diversion dam of the North canal of the Central Oregon Irrigation Co.

Records presented.—April 23, 1907, to September 30, 1910.

Drainage area.—Indeterminate.

Gage.—Vertical staff bolted to a bowlder.

Channel.—Very rough and rocky, somewhat shifting. Logs lodged below cause a somewhat varying degree of backwater.

Discharge measurements.—Made from Staat's bridge, three-fourths mile above pumping station and Bend dam; conditions unfavorable.

Winter flow.—Unaffected by ice.

Diversions.—The Pilot Butte and Central Oregon canals of the Central Oregon Irrigation Co. divert water 5 miles by river above the present gage and measuring section, and have been operated since 1905. No other important diversions. No storage yet developed.

Accuracy.—Records covering the period January 1, 1909, to September 30, 1910, are good, and for certain parts of the period excellent.

Cooperation.—Gage heights furnished by C. A. Stanburrough, engineer of the pumping plant.

Discharge measurements of Deschutes River at Bend, Oreg., in 1907-1909.

Date.	Hydrographer.	Gage height.	Discharge.
		Feet.	Sec.-ft.
1907.			
Apr. 15	I. E. Oakes.....		2,040
1908.			
Apr. 13	H. D. McGlashan.....	1.38	1,630
June 28	.....do.....	1.36	1,490
1909.			
Dec. 18	R. B. Post.....	1.89	2,010

Daily gage height, in feet, of Deschutes River at Bend, Oreg., for 1907-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1.....								1.90	1.75	1.80	1.35	1.42
2.....								1.90	1.68	1.70	1.35	1.45
3.....								1.90	1.70	1.48	1.35	1.40
4.....								1.88	1.70	1.50	1.35	1.40
5.....								1.85	1.70	1.48	1.32	1.40
6.....								1.80	1.70	1.45	1.30	1.40
7.....								1.80	1.70	1.70	1.32	1.40
8.....								1.80	1.75	1.78	1.32	1.40
9.....								1.75	1.75	1.75	1.35	1.40
10.....								1.75	1.72	1.75	1.35	1.40
11.....								1.78	1.72	1.75	1.38	1.40
12.....								1.80	1.72	1.72	1.35	1.40
13.....								1.80	1.70	1.75	1.35	1.38
14.....								1.80	1.70	1.65	1.35	1.38
15.....								1.80	1.70	1.60	1.35	1.35
16.....								1.80	1.70	1.45	1.35	1.40
17.....								1.80	1.70	1.40	1.35	1.38
18.....								1.80	1.68	1.40	1.35	1.40
19.....								1.80	1.62	1.40	1.35	1.40
20.....								1.80	1.60	1.38	1.35	1.35
21.....								1.80	1.60	1.40	1.32	1.45
22.....								1.80	1.55	1.38	1.30	1.35
23.....								1.85	1.55	1.38	1.30	1.38
24.....								1.85	1.85	1.55	1.38	1.38
25.....								1.85	1.85	1.52	1.35	1.38
26.....								1.85	1.85	1.50	1.38	1.35
27.....								1.85	1.85	1.52	1.38	1.32
28.....								1.85	1.85	1.52	1.38	1.40
29.....								1.85	1.82	1.50	1.38	1.35
30.....								1.85	1.80	1.50	1.35	1.40
31.....								1.78		1.32	1.40	

Daily gage height, in feet, of Deschutes River at Bend, Oreg, for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1.38	1.52	1.40	1.85	1.30	1.35	1.40	1.58	1.40	1.36	1.14	1.15
2.....	1.49	1.30	1.40	1.80	1.38	1.35	1.40	1.58	1.45	1.32	1.16	1.26
3.....	1.35	1.30	1.40	1.78	1.45	1.35	1.39	1.58	1.45	1.31	1.16	1.25
4.....	1.35	1.30	1.40	1.72	1.45	1.35	1.39	1.60	1.40	1.31	1.15	1.14
5.....	1.38	1.28	1.40	1.75	1.48	1.40	1.41	1.58	1.39	1.30	1.12	1.15
6.....	1.35	1.25	1.40	1.58	1.38	1.40	1.40	1.55	1.38	1.30	1.11	1.15
7.....	1.32	1.32	1.40	1.60	1.35	1.35	1.40	1.57	1.38	1.28	1.09	1.18
8.....	1.48	1.30	1.40	1.70	1.32	1.25	1.40	1.60	1.39	1.29	1.09	1.16
9.....	1.50	1.50	1.40	1.60	1.32	1.20	1.40	1.64	1.38	1.29	1.09	1.19
10.....	1.45	1.25	1.40	1.55	1.38	1.20	1.41	1.58	1.40	1.26	1.05	1.20
11.....	1.38	1.30	1.42	1.60	1.50	1.30	1.46	1.56	1.40	1.26	1.04	1.19
12.....	1.42	1.28	1.42	1.60	1.50	1.35	1.50	1.55	1.40	1.25	1.02	1.18
13.....	1.32	1.35	1.42	1.60	1.40	1.35	1.50	1.55	1.40	1.25	1.04	1.18
14.....	1.38	1.40	1.45	1.60	1.42	1.42	1.52	1.55	1.42	1.27	1.11	1.18
15.....	1.35	1.40	1.35	1.58	1.40	1.50	1.52	1.60	1.44	1.25	1.15	1.19
16.....	1.30	1.35	1.32	1.48	1.40	1.60	1.55	1.58	1.44	1.27	1.12	1.20
17.....	1.32	1.30	1.40	1.45	1.40	1.65	1.58	1.60	1.45	1.26	1.11	1.20
18.....	1.50	1.35	1.45	1.45	1.40	1.70	1.58	1.55	1.48	1.22	1.10	1.20
19.....	1.45	1.38	1.45	1.40	1.40	1.70	1.58	1.58	1.46	1.20	1.11	1.19
20.....	1.30	1.40	1.45	1.45	1.40	1.65	1.60	1.55	1.49	1.20	1.10	1.18
21.....	1.30	1.40	1.45	1.50	1.40	1.60	1.60	1.52	1.52	1.25	1.10	1.19
22.....	1.28	1.40	1.62	1.50	1.28	1.60	1.63	1.50	1.54	1.20	1.11	1.18
23.....	1.30	1.40	1.75	1.50	1.30	1.55	1.65	1.60	1.55	1.28	1.10	1.20
24.....	1.30	1.40	1.80	1.55	1.35	1.55	1.65	1.46	1.55	1.26	1.10	1.16
25.....	1.30	1.40	1.85	1.55	1.35	1.60	1.69	1.52	1.49	1.22	1.11	1.15
26.....	1.30	1.40	1.85	1.50	1.38	1.60	1.70	1.42	1.42	1.20	1.11	1.15
27.....	1.25	1.45	1.80	1.48	1.32	1.65	1.70	1.42	1.40	1.19	1.10	1.15
28.....	1.30	1.40	1.90	1.50	1.35	1.55	1.69	1.40	1.38	1.19	1.11	1.15
29.....	1.30	1.40	1.88	1.50	1.35	1.42	1.66	1.42	1.35	1.18	1.10	1.15
30.....	1.30	1.40	1.85	1.50	1.35	1.40	1.64	1.40	1.35	1.18	1.14	1.15
31.....	1.30	.....	1.85	1.42	.....	1.40	.....	1.40	.....	1.14	1.15	.....
1908-9.												
1.....	1.15	1.34	1.41	1.40	1.50	1.39	1.38	1.55	1.40	1.18	1.18	1.05
2.....	1.19	1.35	1.42	1.40	1.45	1.45	1.40	1.55	1.39	1.15	1.14	1.10
3.....	1.22	1.36	1.45	1.41	1.55	1.50	1.45	1.50	1.49	1.15	1.10	1.14
4.....	1.19	1.38	1.44	1.41	1.60	1.50	1.50	1.50	1.52	1.12	1.10	1.15
5.....	1.18	1.45	1.43	1.48	1.60	1.48	1.50	1.50	1.58	1.12	1.06	1.18
6.....	1.18	1.50	1.42	1.44	1.49	1.45	1.46	1.45	1.42	1.10	1.02	1.16
7.....	1.19	1.50	1.40	1.42	1.49	1.44	1.40	1.50	1.45	1.15	1.01	1.15
8.....	1.19	1.34	1.38	1.52	1.50	1.38	1.40	1.45	1.45	1.18	1.00	1.15
9.....	1.19	1.46	1.40	1.40	1.50	1.38	1.40	1.50	1.44	1.16	.96	1.12
10.....	1.24	1.45	1.40	1.22	1.50	1.35	1.41	1.50	1.44	1.16	.95	1.10
11.....	1.20	1.45	1.30	1.12	1.49	1.35	1.45	1.50	1.39	1.16	.98	1.10
12.....	1.20	1.45	1.25	1.10	1.42	1.35	1.45	1.50	1.39	1.15	.95	1.10
13.....	1.20	1.42	1.35	1.35	1.41	1.34	1.45	1.50	1.36	1.15	.95	1.12
14.....	1.32	1.34	1.39	1.40	1.38	1.35	1.48	1.49	1.36	1.12	.99	1.10
15.....	1.42	1.30	1.36	1.50	1.36	1.35	1.45	1.45	1.34	1.09	.98	1.10
16.....	1.42	1.34	1.35	1.50	1.44	1.40	1.50	1.41	1.36	1.09	.98	1.10
17.....	1.47	1.30	1.35	1.52	1.58	1.40	1.50	1.39	1.42	1.02	.98	1.10
18.....	1.46	1.35	1.35	1.55	1.58	1.42	1.50	1.35	1.40	1.04	.98	1.10
19.....	1.43	1.45	1.30	1.60	1.58	1.42	1.45	1.31	1.43	1.55	.98	1.10
20.....	1.40	1.48	1.25	1.68	1.65	1.40	1.50	1.31	1.41	1.55	.95	1.10
21.....	1.45	1.47	1.38	1.80	1.65	1.40	1.50	1.30	1.44	1.55	.96	1.10
22.....	1.39	1.50	1.39	1.74	1.56	1.40	1.50	1.30	1.39	1.55	.94	1.10
23.....	1.38	1.56	1.38	1.72	1.50	1.40	1.50	1.29	1.36	1.55	.95	1.10
24.....	1.38	1.58	1.32	1.72	1.50	1.40	1.50	1.30	1.32	1.53	.96	1.10
25.....	1.38	1.55	1.29	1.70	1.45	1.40	1.50	1.30	1.29	1.53	.95	1.11
26.....	1.35	1.52	1.28	1.70	1.40	1.38	1.45	1.29	1.28	1.53	.99	1.12
27.....	1.34	1.45	1.22	1.65	1.40	1.35	1.45	1.25	1.24	1.52	1.00	1.10
28.....	1.32	1.35	1.26	1.60	1.39	1.38	1.50	1.29	1.22	1.52	1.08	1.14
29.....	1.32	1.32	1.34	1.50	.....	1.38	1.52	1.30	1.21	1.52	1.06	1.19
30.....	1.33	1.38	1.40	1.55	.....	1.40	1.52	1.35	1.22	1.36	1.05	1.16
31.....	1.35	.....	1.40	1.55	.....	1.40	.....	1.35	.....	1.26	1.03	.....

Daily gage height, in feet, of Deschutes River at Bend, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.15	1.34	2.70	1.65	1.65	1.9	1.95	1.8	1.7	1.25	1.05	1.35
2.....	1.18	1.42	2.60	1.65	1.65	2.0	1.95	1.8	1.6	1.20	1.4	1.35
3.....	1.19	1.50	2.50	1.35	1.6	2.05	1.9	1.85	1.6	1.25	1.45	1.15
4.....	1.20	1.50	2.40	1.4	1.5	2.15	1.9	1.9	1.7	1.25	1.45	1.1
5.....	1.20	1.50	.....	1.6	1.6	2.2	1.85	1.9	1.5	1.25	1.4	1.05
6.....	1.22	1.50	.....	1.5	1.7	2.3	1.85	1.9	1.45	1.25	1.4	1.1
7.....	1.20	1.45	.....	1.6	1.5	2.3	1.85	1.85	1.4	1.2	1.4	1.1
8.....	1.20	1.45	.....	1.65	1.6	2.3	1.8	1.8	1.35	1.2	1.4	1.1
9.....	1.20	1.50	.....	1.65	1.6	2.2	1.85	1.8	1.35	1.2	1.4	1.1
10.....	1.20	1.50	.....	1.7	1.6	2.1	1.8	1.8	1.3	1.15	1.4	1.05
11.....	1.19	1.50	.....	1.7	1.6	2.05	1.8	1.85	1.3	1.15	1.4	.....
12.....	1.19	1.42	.....	1.65	1.6	1.95	1.8	1.85	1.3	1.15	1.4	1.2
13.....	1.19	1.39	.....	1.6	1.6	1.95	1.8	1.85	1.3	1.15	1.2	1.2
14.....	1.19	1.35	.....	1.6	1.6	2.0	1.8	1.8	1.3	1.15	1.2	1.2
15.....	1.18	1.38	.....	1.6	1.5	2.05	1.8	1.8	1.3	1.1	1.1	1.15
16.....	1.15	1.30	.....	1.55	1.45	2.05	1.8	1.8	1.3	1.1	1.1	1.15
17.....	1.18	1.36	.....	1.5	1.45	2.05	1.8	1.75	1.3	1.1	1.1	1.15
18.....	1.16	1.29	1.89	1.5	1.5	2.05	1.8	1.7	1.3	1.1	1.1	1.2
19.....	1.19	1.32	.....	1.6	1.5	2.05	1.8	1.7	1.3	1.1	1.1	1.3
20.....	1.20	1.44	2.00	1.6	1.5	2.0	1.75	1.7	1.3	1.1	1.05	1.2
21.....	1.19	1.59	.....	1.6	1.5	2.0	1.75	1.6	1.3	1.1	1.05	1.25
22.....	1.20	1.92	.....	1.6	1.5	2.1	1.75	1.6	1.4	1.1	1.05	1.2
23.....	1.20	2.15	.....	1.6	1.6	2.2	1.75	1.6	1.35	1.1	1.05	1.2
24.....	1.20	2.24	.....	1.7	1.6	2.2	1.75	1.5	1.35	1.1	1.05	1.2
25.....	1.18	2.52	.....	1.75	1.65	2.15	1.75	1.5	1.3	1.1	1.05	1.2
26.....	1.16	3.30	.....	1.75	1.65	2.1	1.75	1.5	1.3	1.05	1.05	1.2
27.....	1.15	3.42	1.70	1.7	1.65	2.05	1.75	1.7	1.3	1.1	1.05	1.15
28.....	1.15	3.25	1.65	1.7	1.7	2.0	1.75	1.9	1.3	1.1	1.05	1.2
29.....	1.18	3.00	1.65	1.7	.....	1.95	1.75	.....	1.25	1.1	1.35	1.2
30.....	1.30	2.85	1.66	1.7	.....	1.95	1.8	1.75	1.25	1.05	1.3	1.15
31.....	1.30	.....	1.68	1.7	.....	1.95	.....	1.75	.....	1.05	1.35	.....

Daily discharge, in second-feet, of Deschutes River at Bend, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....	1,440	1,550	1,430	1,420	1,600	1,440	1,230	1,230	1,120
2.....	1,440	1,500	1,500	1,440	1,600	1,430	1,200	1,200	1,160
3.....	1,450	1,600	1,550	1,500	1,550	1,540	1,200	1,160	1,200
4.....	1,450	1,660	1,550	1,550	1,550	1,570	1,180	1,160	1,200
5.....	1,530	1,660	1,530	1,550	1,550	1,640	1,180	1,130	1,230
6.....	1,480	1,540	1,500	1,510	1,500	1,460	1,160	1,100	1,210
7.....	1,460	1,540	1,480	1,440	1,550	1,500	1,200	1,090	1,200
8.....	1,570	1,550	1,420	1,440	1,500	1,500	1,230	1,080	1,200
9.....	1,440	1,550	1,420	1,440	1,550	1,480	1,210	1,050	1,180
10.....	1,270	1,550	1,390	1,450	1,550	1,480	1,210	1,040	1,160
11.....	1,180	1,540	1,390	1,500	1,550	1,430	1,210	1,070	1,160
12.....	1,160	1,460	1,390	1,500	1,550	1,430	1,200	1,040	1,160
13.....	1,390	1,450	1,380	1,500	1,550	1,400	1,200	1,040	1,180
14.....	1,440	1,420	1,390	1,530	1,540	1,400	1,180	1,070	1,160
15.....	1,550	1,400	1,390	1,500	1,500	1,380	1,150	1,070	1,160
16.....	1,550	1,480	1,440	1,550	1,450	1,400	1,150	1,070	1,160
17.....	1,570	1,640	1,440	1,550	1,430	1,460	1,100	1,070	1,160
18.....	1,600	1,640	1,460	1,550	1,390	1,440	1,110	1,070	1,160
19.....	1,660	1,640	1,460	1,500	1,350	1,470	1,600	1,070	1,160
20.....	1,760	1,720	1,440	1,550	1,350	1,450	1,600	1,040	1,160
21.....	1,900	1,720	1,440	1,550	1,340	1,480	1,600	1,050	1,160
22.....	1,830	1,620	1,440	1,550	1,340	1,430	1,600	1,040	1,160
23.....	1,800	1,550	1,440	1,550	1,330	1,400	1,600	1,040	1,160
24.....	1,800	1,550	1,440	1,550	1,340	1,360	1,580	1,050	1,160
25.....	1,780	1,500	1,440	1,550	1,340	1,330	1,580	1,040	1,170
26.....	1,780	1,440	1,420	1,500	1,330	1,320	1,580	1,070	1,180
27.....	1,720	1,440	1,390	1,500	1,300	1,290	1,570	1,080	1,160
28.....	1,660	1,430	1,420	1,550	1,330	1,270	1,570	1,140	1,200
29.....	1,550	.....	1,420	1,570	1,340	1,260	1,570	1,130	1,240
30.....	1,600	.....	1,440	1,570	1,390	1,270	1,400	1,120	1,210
31.....	1,600	.....	1,440	1,570	1,390	1,270	1,300	1,100	.....

Daily discharge, in second-feet, of Deschutes River at Bend, Oreg., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,200	1,380	3,330	1,680	1,680	2,020	2,100	1,880	1,740	1,230	1,050	1,330
2.....	1,230	1,460	3,150	1,680	1,680	2,170	2,100	1,880	1,610	1,180	1,380	1,330
3.....	1,240	1,550	2,970	1,330	1,610	2,240	2,020	1,950	1,610	1,230	1,440	1,140
4.....	1,250	1,550	2,800	1,380	1,400	2,400	2,020	2,020	1,740	1,230	1,440	1,090
5.....	1,250	1,550	1,840	1,610	1,610	2,480	1,950	2,020	1,490	1,230	1,380	1,050
6.....	1,270	1,550	1,530	1,490	1,740	2,650	1,950	2,020	1,440	1,230	1,380	1,090
7.....	1,250	1,500	1,800	1,610	1,490	2,650	1,950	1,950	1,380	1,180	1,380	1,090
8.....	1,250	1,500	2,020	1,680	1,610	2,650	1,880	1,880	1,330	1,180	1,380	1,090
9.....	1,250	1,550	2,140	1,680	1,610	2,480	1,950	1,880	1,330	1,180	1,380	1,090
10.....	1,250	1,550	2,080	1,740	1,610	2,320	1,880	1,880	1,280	1,140	1,380	1,050
11.....	1,240	1,550	2,070	1,740	1,610	2,240	1,880	1,950	1,280	1,140	1,380	1,100
12.....	1,240	1,460	2,100	1,680	1,610	2,100	1,880	1,950	1,280	1,140	1,380	1,180
13.....	1,240	1,430	2,120	1,610	1,610	2,100	1,880	1,950	1,280	1,140	1,180	1,180
14.....	1,240	1,390	2,140	1,610	1,610	2,170	1,880	1,880	1,280	1,140	1,180	1,180
15.....	1,230	1,420	1,980	1,610	1,490	2,240	1,880	1,880	1,280	1,090	1,090	1,140
16.....	1,200	1,340	1,910	1,550	1,440	2,240	1,880	1,880	1,280	1,090	1,090	1,140
17.....	1,230	1,400	1,840	1,490	1,440	2,240	1,880	1,810	1,280	1,090	1,090	1,140
18.....	1,210	1,330	2,010	1,490	1,490	2,240	1,880	1,740	1,280	1,090	1,090	1,180
19.....	1,240	1,360	1,760	1,610	1,490	2,240	1,880	1,740	1,280	1,090	1,090	1,280
20.....	1,250	1,480	2,170	1,610	1,490	2,170	1,810	1,740	1,280	1,090	1,050	1,180
21.....	1,240	1,650	1,760	1,610	1,490	2,170	1,810	1,610	1,280	1,090	1,050	1,230
22.....	1,250	2,060	1,710	1,610	1,490	2,320	1,810	1,610	1,380	1,090	1,050	1,180
23.....	1,250	2,400	1,650	1,610	1,610	2,480	1,810	1,610	1,330	1,090	1,050	1,180
24.....	1,250	2,530	1,690	1,740	1,610	2,480	1,810	1,490	1,330	1,090	1,050	1,180
25.....	1,230	3,010	1,760	1,810	1,680	2,400	1,810	1,490	1,280	1,090	1,050	1,180
26.....	1,210	4,510	1,760	1,810	1,680	2,320	1,810	1,490	1,280	1,050	1,050	1,180
27.....	1,200	4,760	1,780	1,740	1,680	2,240	1,810	1,740	1,280	1,090	1,050	1,140
28.....	1,200	4,400	1,720	1,740	1,740	2,170	1,810	2,020	1,280	1,090	1,050	1,180
29.....	1,230	3,300	1,720	1,740	.....	2,100	1,810	1,900	1,230	1,090	1,330	1,180
30.....	1,340	3,620	1,730	1,740	.....	2,100	1,880	1,810	1,230	1,050	1,280	1,140
31.....	1,340	.....	1,760	1,740	.....	2,100	.....	1,810	.....	1,050	1,330	.....

NOTE.—Daily discharge determined as follows:

1909. From fairly well defined rating curve based on one measurement and comparison with records of discharge at Benham Falls and of diversions during periods of fairly constant flow; discharge Dec. 5-17, 19, and 21-26 estimated from Benham Falls less canals.

1910. From curve fairly well defined between 1,200 and 2,100 second-feet.

Monthly discharge of Deschutes River at Bend, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
January.....	1,900	1,160	1,560	95,900	B.
February.....	1,720	1,400	1,550	86,100	B.
March.....	1,550	1,380	1,440	88,500	B.
April.....	1,740	1,420	1,510	89,800	B.
May.....	1,600	1,300	1,450	89,200	B.
June.....	1,640	1,260	1,420	84,500	B.
July.....	1,600	1,100	1,340	82,400	B.
August.....	1,230	1,040	1,090	67,000	B.
September.....	1,240	1,120	1,180	70,200	B.
The period.....	.....			754,000	
1909-10.					
October.....	1,340	1,200	1,240	76,200	B.
November.....	4,760	1,330	2,070	123,000	B.
December.....	3,330	1,530	2,030	125,000	C.
January.....	1,810	1,330	1,640	101,000	A.
February.....	1,740	1,440	1,590	88,300	A.
March.....	2,650	2,020	2,290	141,000	A.
April.....	2,100	1,810	1,890	112,000	A.
May.....	2,020	1,490	1,720	106,000	A.
June.....	1,740	1,230	1,360	80,900	A.
July.....	1,230	1,050	1,130	69,500	A.
August.....	1,440	1,050	1,210	74,400	A.
September.....	1,330	1,050	1,160	69,000	A.
The year.....	4,760	1,050	1,610	1,170,000	

CENTRAL OREGON CANAL NEAR BEND, OREG.

Location.—In sec. 7, T. 18 S., R. 12 E., at a flume section $\frac{1}{2}$ mile below the point where the waters in the main diversion canal are divided between this canal and the Pilot Butte canal; about 2 miles south of Bend.

Records presented.—March 11, 1905, to September 30, 1910.

Gage.—Vertical staff, consisting of a painted strip of galvanized iron nailed to the inside of flume on right side.

Channel.—A plank flume of rectangular cross section provided with battening on bottom cracks. Flume rather unstable, but rating appears not to change.

Discharge measurements.—Made from yoke of flume at gage section.

Winter flow.—Canal operated almost continuously. The flow in winter is small.

The fall through the section at the gage is sufficient to maintain open channel at all times.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by the Central Oregon Irrigation Co.

Discharge measurements of Central Oregon canal near Bend, Oreg., for 1905–1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 22	Ivan Landes.....	1.20	69.5	Apr. 4	I. E. Oakes.....	1.52	95
June 22	.....do.....	.90	43.4				
Aug. 10	.....do.....	.60	21.6	1908.			
Sept. 22	.....do.....	1.11	54.8	Apr. 4	H. D. McGlashan.....	1.20	65
Nov. 16	.....do.....	1.19	59.2				
1906.				1909.			
Apr. 18	I. Landes.....	.80	35	Apr. 22	R. B. Post.....	2.10	144
May 18	.....do.....	1.25	66				
June 10	.....do.....	1.45	86	1910.			
19	J. C. Stevens.....	1.44	92	Apr. 22	L. R. Allen.....	2.08	159
19	I. Landes.....	1.44	90	June 21	.....do.....	2.67	251
19	L. R. Allen.....	1.44	87	July 6	.....do.....	2.55	234
Aug. 22	C. W. Allen.....	1.87	134	Sept. 18	Allen and Davenport...	2.20	172

Daily gage height, in feet, of Central Oregon canal near Bend, Oreg., for 1905–1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.									0.98		0.6	0.75
2.									.95	1.0		.7
3.									.95	.85		.7
4.									1.0			.8
5.									.95			.78
6.									1.15			1.1
7.									.82			1.08
8.									.32			.78
9.									.3	.7		.7
10.									.45	.83		.65
11.						0.52			.82	.75		.68
12.						.52			.85	.98		.65
13.						.52			1.0	.9		.7
14.									1.0	.7		1.2
15.									1.3			1.2
16.						.65			.82	.7		1.25
17.						.65			.8	.6		1.25
18.									.95	.82		1.0
19.									.95	.3		1.0
20.										.7		1.0
21.										.7		1.1
22.									.85			1.15
23.									.85	.7		1.12
24.									.85	.7		1.1
25.									.85	.7		.55
26.									.85			.65
27.									.85	.35		.95
28.									.92	.6		.55
29.									.85	.0		1.15
30.									.85	.6		1.12
31.										.6		.9

Daily gage height, in feet, of Central Oregon canal near Bend, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1.15	1.22	1.3	-----	1.35	1.25	1.25	0.80	1.25	1.58	1.80	1.87
2.....	.58	1.05	1.3	-----	1.25	.90	1.25	-----	1.25	1.58	1.80	1.88
3.....	.82	1.12	1.3	0.38	1.60	1.15	1.25	1.12	1.25	1.58	1.80	1.87
4.....	.0	1.22	1.35	.90	1.60	1.30	1.25	1.30	1.25	1.58	1.80	1.87
5.....	.42	1.22	1.4	.90	1.20	1.20	1.25	1.20	1.25	1.61	1.80	1.87
6.....	.85	1.22	1.38	.90	.95	.60	1.25	1.20	1.25	1.64	1.80	1.87
7.....	.95	1.2	1.35	1.00	.65	.60	1.25	.60	1.25	1.64	1.80	1.87
8.....	1.05	1.1	1.45	.55	.65	.60	1.12	.60	1.35	1.65	1.80	1.86
9.....	.52	1.2	1.35	-----	.65	.90	.90	1.20	1.45	1.65	1.80	1.87
10.....	.85	1.25	1.35	-----	.65	.90	.82	1.22	1.45	1.67	1.80	1.87
11.....	.85	1.25	1.4	-----	.32	-----	.85	1.20	1.45	1.69	1.80	1.87
12.....	1.15	1.25	1.4	.62	.33	.35	1.20	1.20	1.45	1.85	1.80	1.87
13.....	1.15	1.25	1.15	.43	.32	.45	1.25	1.20	1.45	1.84	1.80	1.85
14.....	1.2	1.25	.85	1.42	.65	-----	1.25	1.20	1.45	1.85	1.80	1.84
15.....	1.2	1.25	.9	1.50	1.10	-----	1.25	1.20	1.45	1.85	1.80	1.84
16.....	1.0	1.25	1.4	1.20	.65	-----	.62	1.20	1.45	1.77	1.87	1.84
17.....	1.0	1.2	1.5	-----	-----	-----	.40	1.20	1.45	1.70	1.87	1.84
18.....	1.0	1.22	1.45	-----	-----	-----	.78	1.20	1.45	1.70	1.87	1.84
19.....	1.0	1.3	1.4	-----	-----	-----	.90	1.20	1.45	1.70	1.87	1.84
20.....	1.0	1.3	1.4	-----	-----	-----	.85	1.10	1.45	1.70	1.87	1.84
21.....	1.0	1.32	1.4	-----	-----	-----	.75	1.10	1.45	1.70	1.87	1.84
22.....	1.0	1.35	1.1	-----	-----	-----	.75	1.10	1.48	1.70	1.87	1.84
23.....	1.0	1.35	.4	-----	-----	-----	.78	1.10	1.53	1.70	1.87	1.82
24.....	1.1	.62	.0	-----	-----	-----	.75	1.10	1.53	1.70	1.87	1.84
25.....	1.1	.48	.0	1.50	-----	.55	.80	1.10	1.53	1.70	1.77	1.84
26.....	1.28	1.1	.0	1.40	-----	1.05	.82	1.10	1.53	1.80	1.77	1.84
27.....	1.60	1.3	.0	1.25	.50	1.05	.85	1.25	1.53	1.80	1.82	1.84
28.....	1.12	1.3	.42	1.50	.50	1.12	.92	1.25	1.53	1.88	1.87	1.84
29.....	1.05	1.3	.0	1.40	-----	1.20	1.20	1.25	1.53	1.81	1.88	1.84
30.....	1.15	1.38	.0	1.40	-----	1.25	1.20	1.25	1.53	1.80	1.87	1.82
31.....	1.3	-----	.0	1.52	-----	1.25	-----	1.25	-----	1.79	1.87	-----
1906-7.												
1.....	1.84	1.68	1.09	1.06	1.42	1.37	1.53	1.56	1.90	1.40	2.35	1.70
2.....	1.84	1.65	.98	1.00	1.55	1.37	1.53	1.56	1.90	1.12	2.36	1.60
3.....	1.82	1.59	.98	1.00	-----	1.37	1.53	1.56	2.00	1.90	2.38	1.80
4.....	1.84	1.08	.98	1.00	-----	1.37	1.56	1.56	1.98	2.18	2.38	1.85
5.....	1.84	1.09	1.09	1.00	-----	1.37	1.60	1.56	1.95	2.20	2.40	1.85
6.....	1.84	1.6	1.19	1.00	-----	1.08	1.55	1.66	1.95	2.20	2.40	1.90
7.....	1.84	1.48	1.20	1.00	-----	.78	1.32	1.76	1.95	-----	2.40	1.82
8.....	1.84	1.10	1.20	.80	-----	.78	1.56	1.74	1.95	-----	2.30	1.75
9.....	1.84	1.02	1.20	.40	-----	1.02	1.56	1.87	1.95	-----	2.20	1.70
10.....	1.84	.51	1.20	-----	1.00	1.25	1.56	1.87	1.95	-----	2.20	1.75
11.....	1.83	-----	1.20	-----	1.00	1.25	1.58	1.87	1.95	-----	2.15	1.60
12.....	1.83	-----	1.20	-----	.98	1.38	1.59	1.87	1.95	-----	2.15	1.50
13.....	1.84	-----	1.20	-----	1.14	1.42	1.62	1.92	1.95	-----	2.12	1.80
14.....	1.84	1.00	1.38	-----	1.44	1.49	1.66	1.96	1.94	-----	2.00	1.82
15.....	1.84	1.40	1.54	-----	1.38	1.53	1.68	1.96	1.90	1.80	2.00	1.85
16.....	1.82	1.60	1.55	-----	1.39	1.53	1.69	1.96	1.90	1.95	2.00	1.80
17.....	1.80	.80	1.55	-----	1.42	1.53	1.70	1.94	1.88	2.15	2.00	1.80
18.....	1.77	-----	1.55	-----	1.40	1.54	1.70	1.96	1.85	2.22	2.00	1.85
19.....	1.77	.20	1.55	-----	1.40	1.53	1.70	2.00	1.92	2.30	1.95	1.85
20.....	1.77	.62	1.55	-----	1.45	1.53	1.64	1.97	1.95	2.28	2.00	1.75
21.....	1.76	.98	1.55	-----	.65	1.53	1.54	1.99	2.02	2.25	2.00	1.50
22.....	1.77	.38	1.55	-----	.49	1.53	1.55	1.99	2.10	2.28	2.10	1.80
23.....	1.77	.40	1.55	-----	.40	1.53	1.55	1.95	2.12	2.30	2.05	1.78
24.....	1.77	.60	1.38	-----	.85	1.53	1.55	1.92	2.15	2.30	1.95	1.70
25.....	1.76	.77	1.20	-----	1.39	1.53	1.55	1.89	2.12	2.30	2.00	1.75
26.....	1.76	.90	1.20	-----	1.48	1.53	1.55	1.80	2.15	2.30	1.98	1.75
27.....	1.77	1.00	1.20	-----	1.37	1.53	1.55	1.82	2.22	2.30	1.75	1.75
28.....	1.77	1.10	1.20	-----	1.37	1.53	1.55	1.81	2.28	2.30	1.82	1.72
29.....	1.77	1.20	1.20	.80	-----	1.53	1.55	1.70	2.30	2.32	1.80	1.75
30.....	1.77	1.20	1.20	1.06	-----	1.53	1.55	1.70	2.30	2.32	1.70	1.75
31.....	1.72	-----	-----	1.20	-----	1.53	-----	1.78	-----	2.34	1.72	-----

Daily gage height, in feet, of Central Oregon canal near Bend, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1	1.75	1.12	1.75	.....	.....	.....	1.40	1.70	2.00	2.20	2.50	2.40
2	1.50	1.75	1.75	.....	.....	.....	1.40	1.80	2.00	2.28	2.50	2.40
3	1.65	1.70	1.75	0.50	.....	.....	1.40	1.80	2.00	2.30	2.50	2.35
4	1.20	1.75	1.75	1.15	.....	.....	1.30	1.80	2.02	2.40	2.50	2.35
5	1.70	1.75	1.63	1.50	.....	.....	1.20	1.80	2.05	2.40	2.50	2.35
6	1.60	1.75	1.63	1.60	0.69	.....	1.20	1.90	2.05	2.40	2.55	2.35
7	1.80	1.75	1.60	.80	1.38	.....	1.20	1.95	2.05	2.40	2.55	2.35
8	.50	1.75	1.60	.....	1.38	1.55	1.10	1.95	2.10	2.40	2.55	2.35
9	.....	.88	1.60	1.30	1.58	1.58	1.10	1.95	2.10	2.42	2.60	2.35
10	1.55	1.70	1.60	.75	.79	1.75	1.14	1.95	2.10	2.45	2.65	2.35
11	.85	1.70	1.60	.75	.....	.....	1.17	1.95	2.08	2.50	2.65	2.35
12	1.80	1.65	1.60	.75	.....	.....	1.26	1.95	2.10	2.50	2.65	2.35
13	1.80	1.66	1.60	.....	.....	.30	1.40	1.95	2.10	2.50	2.65	2.38
14	1.70	1.68	1.52	.75	.....	.30	1.40	1.95	2.10	2.50	2.50	2.40
15	1.60	1.68	1.60	1.00	.....	.30	1.40	1.95	2.10	2.50	2.45	2.40
16	1.90	1.68	1.68	1.38	.....	.30	1.40	1.95	2.10	2.50	2.45	2.40
17	1.70	1.60	.....	1.48	.....	.30	1.40	1.95	2.10	2.50	2.45	2.38
18	.....	1.55	.....	1.45	.....	.30	1.40	1.95	2.15	2.50	2.45	2.35
19	1.72	1.55	.....	1.45	.....	.30	1.45	1.85	2.20	2.50	2.45	2.35
20	1.82	1.50	.....	1.45	.....	.30	1.50	1.85	2.20	2.50	2.45	2.35
21	1.75	1.45	.....	.....	1.55	.30	1.55	1.85	2.10	2.45	2.45	2.30
22	1.90	1.55	.....	.....	.80	.30	1.60	1.88	2.10	2.50	2.45	2.25
23	1.90	1.50	.....	.....	.....	.30	1.65	1.90	2.10	2.50	2.42	2.25
24	1.89	1.62	.85	.....	.....	.30	1.70	1.95	2.10	2.50	2.40	2.25
25	1.85	1.68	1.70	.....	.....	.30	1.70	1.95	2.10	2.50	2.40	2.25
26	1.85	1.60	1.70	.....	.....	.30	1.70	2.00	2.15	2.50	2.40	2.25
27	1.85	1.65	1.50	.....	.....	.30	1.70	2.00	2.15	2.50	2.40	2.25
28	1.85	1.65	1.50	.....	.....	.85	1.70	2.00	2.18	2.50	2.40	2.25
29	1.85	1.68	.....	.....	.....	1.40	1.70	2.00	2.20	2.50	2.40	2.25
30	1.85	1.75	.....	.....	.....	1.40	1.70	2.00	2.20	2.50	2.40	2.25
31	1.85	.....	.....	.....	.....	1.40	.....	2.00	.....	2.50	2.40	.....
1908-9.												
1	2.25	1.65	.92	.....	.7	1.55	1.45	2.15	2.45	2.72	2.22	2.45
2	2.25	1.65	.80	.....	.7	.75	1.45	2.18	1.48	2.75	2.38	2.42
3	2.25	1.20	.80	.....	.9	.75	1.45	2.2	1.62	2.75	2.48	2.45
4	2.20	.95	.80	.....	.9	.75	1.45	2.2	.9	2.78	2.48	2.3
5	2.15	.85	.80	.....	.9	.75	1.45	2.25	1.72	2.8	2.48	2.32
6	2.10	.80	.62	.....	1.2	.75	1.5	2.3	.65	2.8	2.62	2.3
7	2.10	.80	.45	.....	.75	.75	1.55	2.3	2.45	2.78	2.68	2.25
8	2.10	.80	.45	.....	.75	1.08	1.55	2.35	2.45	2.7	2.75	2.2
9	2.10	.80	.60	.....	.75	1.4	1.55	2.35	2.45	2.7	2.78	2.2
10	2.10	.80	1.15	.....	.75	1.4	1.55	2.35	2.45	2.6	2.8	2.2
11	2.10	.80	1.55	.....	.75	1.4	1.55	2.32	2.45	2.6	2.78	2.2
12	2.10	.80	1.05	.....	.75	1.4	1.7	2.3	2.55	2.6	2.8	2.2
13	2.10	1.20	.65	.....	.75	1.4	1.7	2.4	2.65	2.6	2.75	2.2
14	2.10	1.60	.65	.....	.75	1.4	1.8	2.4	2.75	2.6	2.7	2.2
15	2.10	1.60	.45	.....	1.15	1.4	1.9	2.4	2.75	2.65	2.7	2.2
16	2.10	1.60	.45	.....	1.15	1.4	2.0	2.4	2.75	2.72	2.7	2.2
17	2.00	1.60	.45	.....	.75	1.4	2.0	2.4	2.72	2.85	2.7	2.2
18	1.95	.80	.45	.....	.75	1.4	1.95	2.5	2.95	2.88	2.72	2.2
19	1.90	.80	.22	.....	.75	1.4	1.9	2.5	2.6	.....	2.7	2.2
20	1.85	.80	.....	.....	.98	1.4	2.0	2.5	2.5	.....	2.68	2.2
21	1.80	.80	.....	.....	.78	1.4	2.1	2.5	2.35	.....	2.75	2.2
22	1.70	.80	.28	.....	.....	1.4	2.1	2.5	2.35	.....	2.72	2.2
23	1.70	.80	1.00	.....	.....	1.4	2.12	2.5	2.4	.....	2.7	2.2
24	1.70	.80	1.38	.....	.....	1.4	2.15	2.5	2.5	.....	2.68	2.2
25	1.70	.80	1.50	.....	.....	1.4	2.15	2.5	2.6	.....	2.68	2.15
26	1.65	.80	1.58	.....	1.55	1.4	2.15	2.55	2.62	.....	2.58	2.1
27	1.65	1.18	1.75	.72	1.55	1.4	2.15	2.55	2.68	.....	2.58	2.1
28	1.65	1.55	1.85	1.45	1.55	1.4	2.15	2.5	2.7	.....	2.58	2.1
29	1.65	1.30	1.68	1.55	.....	1.35	2.15	2.45	2.7	.75	2.45	2.0
30	1.65	1.05	.95	1.12	.....	1.38	2.15	2.45	2.7	1.25	2.45	2.1
31	1.65	.....	.70	.7	.....	1.45	.....	2.45	.....	1.95	2.45	.....

Daily gage height, in feet, of Central Oregon canal near Bend, Oreg., for 1905-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.	2.05	1.8					1.4	2.2	.3	2.8	3.0	.85
2.	2.0	.9				.35	1.5	2.2	1.3	2.75	.2	1.6
3.	1.9		.3			.35	1.55	2.2	1.7	2.75		2.5
4.	1.8		.3			.3	1.55	2.2	.8	2.6		2.7
5.	1.8						1.5	2.15	1.9	2.55		2.7
6.	1.8				.45	.3	1.5	2.15	2.45	2.55		2.7
7.	1.8			1.1	.9		1.5	2.15	2.7	2.65		2.7
8.	1.8			1.45	.55	.8	1.7	2.2	2.8	2.75		2.7
9.	1.7			.8		1.1	1.7	2.2	2.8	2.9		2.7
10.	1.7					1.45	1.7	2.2	2.8	2.9		2.7
11.	1.7			.45		1.45	1.7	2.2	2.8	2.9		2.6
12.	1.7			.9		1.55	1.7	2.2	2.85	2.9	.75	2.6
13.	1.7	.9	.3	.6		.8	1.7	2.2	2.85	2.9	1.9	2.6
14.	1.7	.9	.5	.6	.5	.45	1.7	2.2	2.85	2.9	2.4	2.55
15.	1.7		.45	.8	1.0	.9	1.7	2.2	2.85	2.9	2.6	2.45
16.	1.8		1.15	.8	1.1	.85	1.7	2.2	2.85	3.0	2.7	2.4
17.	1.8	.85	1.4	.8	1.25	.8	1.7	2.3	2.85	3.0	2.75	2.4
18.	1.8	1.1	1.4	.8	1.4	.8	1.7	2.35	2.85	3.0	2.8	2.4
19.	1.8	1.4			1.45	1.2	1.7	2.4	2.85	3.0	2.8	2.0
20.	1.8	1.7			1.4	1.6	1.9	2.5	2.8	3.0	2.9	1.9
21.	1.8	1.7			1.3	1.45	1.95	2.6	2.7	3.0	2.9	2.3
22.	1.8				.65	1.2	2.1	2.65	2.35	3.0	2.9	2.35
23.	1.8			.9		.9	2.1	2.75	2.3	3.0	2.9	2.4
24.	1.8			.45	.4	1.0	2.1	2.7	2.55	3.0	2.9	2.35
25.	1.8				.4	1.05	2.1	2.75	2.6	3.0	2.9	2.4
26.	1.8				.5	1.1	2.1	2.8	2.6	3.0	2.9	2.3
27.	1.8				.95	1.15	2.15	1.45	2.6	3.0	2.9	2.3
28.	1.8					1.15	2.2		2.7	3.0	1.45	2.3
29.	1.75					1.15	2.2		2.75	3.0	.8	2.2
30.	1.8			.9		1.15	2.2		2.8	3.0	.8	2.2
31.	1.8			.45		1.3				3.0	.8	

Daily discharge, in second-feet, of Central Oregon canal near Bend, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.									47	0	22	31
2.									44	48	0	28
3.									44	38	28	28
4.									48	0	28	34
5.									44	0	28	33
6.									60	0	28	56
7.									35	0	28	54
8.									9	0	28	33
9.									8	28	28	28
10.									14	36	28	25
11.						18			35	31	28	27
12.						18			38	47	28	25
13.						18			48	41	28	28
14.						0			48	28	28	65
15.						0			74	0	0	65
16.						25			35	28	28	70
17.						25			34	22	28	70
18.									44	35	0	48
19.									44	8	28	48
20.									0	28	23	48
21.									0	28	18	56
22.								65	38	0	20	60
23.									38	28	18	58
24.									38	28	20	56
25.									38	28	41	20
26.									38	0	48	25
27.									38	10	38	44
28.									42	22	41	20
29.									38	0	41	60
30.									38	22	41	58
31.										22	41	

Daily discharge, in second-feet, of Central Oregon canal near Bend, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	60	67	74	0	79	70	70	34	70	103	128	136
2.....	21	52	74	0	70	41	70	0	70	103	128	138
3.....	35	58	74	11	105	60	70	58	70	103	128	136
4.....	0	67	79	41	105	74	70	74	70	103	128	136
5.....	13	67	84	41	65	65	70	65	70	106	128	136
6.....	38	67	82	41	44	22	70	65	70	109	128	136
7.....	44	65	79	48	25	22	70	22	70	109	128	136
8.....	52	56	89	20	25	22	58	22	79	110	128	135
9.....	18	65	79	0	25	41	41	65	89	110	128	136
10.....	38	70	79	0	25	41	35	67	89	113	128	136
11.....	38	70	84	0	9	0	38	65	89	115	128	136
12.....	60	70	84	23	9	10	65	65	89	134	128	136
13.....	60	70	60	14	9	14	70	65	89	133	128	134
14.....	65	70	38	86	25	0	70	65	89	134	128	133
15.....	65	70	41	94	56	0	70	65	89	134	128	133
16.....	48	70	84	65	25	0	23	65	89	124	136	133
17.....	48	65	94	0	0	0	12	65	89	116	136	133
18.....	48	67	89	0	0	0	33	65	89	116	136	133
19.....	48	74	84	0	0	0	41	65	89	116	136	133
20.....	48	74	84	0	0	0	38	56	89	116	136	133
21.....	48	76	84	0	0	0	31	56	89	116	136	133
22.....	48	79	56	0	0	0	31	56	82	116	136	133
23.....	48	79	12	0	0	0	33	56	97	116	136	130
24.....	56	23	0	0	0	0	31	56	97	116	136	133
25.....	56	16	0	94	0	20	34	56	97	116	124	133
26.....	72	56	0	84	0	52	35	56	97	128	124	133
27.....	105	74	0	70	17	52	38	70	97	128	130	133
28.....	58	74	13	94	17	58	42	70	97	138	136	133
29.....	52	74	0	84	-----	65	65	70	97	129	138	133
30.....	60	82	0	84	-----	70	65	70	97	128	136	130
31.....	74	0	0	96	-----	70	-----	70	-----	127	136	-----
1906-7.												
1.....	133	114	55	54	85	80	95	98	134	83	188	112
2.....	133	110	47	49	97	80	95	98	134	59	189	102
3.....	130	104	47	49	0	80	95	98	146	134	192	123
4.....	133	54	47	49	0	80	98	98	144	168	192	128
5.....	133	55	55	49	0	80	102	98	140	170	194	128
6.....	133	105	64	49	0	55	97	108	140	170	194	134
7.....	133	92	65	49	0	34	94	119	140	0	194	125
8.....	133	56	65	35	0	34	98	116	140	0	182	118
9.....	133	50	65	12	0	51	98	131	140	0	170	112
10.....	133	18	65	0	49	70	98	131	140	0	170	118
11.....	132	0	65	0	49	70	100	131	140	0	164	102
12.....	132	0	65	0	48	81	101	131	140	0	164	92
13.....	133	0	65	0	60	85	104	136	140	0	160	123
14.....	133	48	82	0	87	91	108	141	139	0	146	125
15.....	133	84	98	0	81	95	110	141	134	123	146	128
16.....	130	105	100	0	82	95	111	141	134	140	146	123
17.....	128	34	100	0	85	95	112	139	132	164	146	123
18.....	124	0	100	0	83	96	112	141	128	172	146	128
19.....	124	5	100	0	83	95	112	146	136	182	140	128
20.....	124	23	100	0	88	95	106	142	140	180	146	118
21.....	123	47	100	0	25	95	96	145	148	176	146	92
22.....	124	11	100	0	16	95	97	145	158	180	158	123
23.....	124	12	100	0	12	95	97	140	160	182	152	121
24.....	124	22	82	0	38	95	97	136	164	182	140	112
25.....	123	32	65	0	82	95	97	133	160	182	146	118
26.....	123	41	65	0	90	95	97	123	164	182	144	118
27.....	124	48	65	0	80	95	97	125	182	118	118	118
28.....	124	56	65	0	80	95	97	124	180	182	125	114
29.....	124	65	65	35	-----	95	97	112	182	184	123	118
30.....	124	65	65	54	-----	95	97	112	182	184	112	118
31.....	118	-----	65	65	-----	95	-----	121	-----	187	114	-----

Daily discharge, in second-feet, of Central Oregon canal near Bend, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1	118	59	118	0	0	0	83	112	146	170	207	194
2	92	118	118	0	0	0	83	123	146	180	207	194
3	107	112	118	17	0	0	83	123	146	182	207	188
4	65	118	118	61	0	0	74	123	148	194	207	188
5	112	118	105	92	0	0	65	123	152	194	207	188
6	102	118	105	102	27	0	65	134	152	194	214	188
7	123	118	102	35	81	0	65	140	152	194	214	188
8	17	118	102	0	81	97	57	140	158	194	214	188
9	0	41	102	74	100	100	57	140	158	197	220	188
10	97	112	102	32	34	118	60	140	158	200	226	188
11	38	112	102	32	0	0	63	140	156	207	226	188
12	123	107	102	32	0	0	70	140	158	207	226	188
13	123	108	102	0	0	8	83	140	158	207	226	192
14	112	110	94	32	0	8	83	140	158	207	207	194
15	102	110	102	49	0	8	83	140	158	207	200	194
16	134	110	110	81	0	8	83	140	158	207	200	194
17	112	102	0	90	0	8	83	140	158	207	200	192
18	0	97	0	88	0	8	83	140	164	207	200	188
19	114	97	0	88	0	8	88	128	170	207	200	188
20	125	92	0	88	0	8	92	128	170	207	200	188
21	118	88	0	0	97	8	97	128	158	204	200	182
22	134	97	0	0	35	8	102	132	158	207	200	176
23	134	92	0	0	0	8	107	134	158	207	197	176
24	133	104	38	0	0	8	112	140	158	207	194	176
25	128	110	112	0	0	8	112	140	158	207	194	176
26	128	102	112	0	0	8	112	146	164	207	194	176
27	128	107	92	0	0	8	112	146	164	207	194	176
28	128	107	92	0	0	38	112	146	168	207	194	176
29	128	110	0	0	0	83	112	146	170	207	194	176
30	128	118	0	0	0	83	112	146	170	207	194	176
31	128	0	0	0	0	83	112	146	0	207	194	0
1908-9.												
1	176	107	43	0	28	97	88	164	200	236	172	200
3	176	107	35	0	28	32	88	168	90	240	192	197
3	176	65	35	0	42	32	88	170	104	240	204	200
4	170	46	35	0	42	32	88	170	42	243	204	182
5	164	38	35	0	42	32	88	176	114	246	204	184
6	158	35	23	0	65	32	92	182	25	246	223	182
7	158	35	14	0	32	32	97	182	200	243	230	176
8	158	35	14	0	32	55	97	188	200	233	240	170
9	158	35	22	0	32	83	97	188	200	233	243	170
10	158	35	61	0	32	83	97	188	200	220	246	170
11	158	35	97	0	32	83	97	184	200	220	243	170
12	158	35	53	0	32	83	112	182	214	220	246	170
13	158	65	25	0	32	83	112	194	226	220	240	170
14	158	102	25	0	32	83	123	194	240	220	233	170
15	158	102	14	0	61	83	134	194	240	226	233	170
16	158	102	14	0	61	83	146	194	240	236	233	170
17	146	102	14	0	32	83	146	194	236	252	233	170
18	140	35	14	0	32	83	140	207	188	256	236	170
19	134	35	5	0	32	83	134	207	220	0	235	170
20	128	35	0	0	48	83	146	207	207	0	230	170
21	123	35	0	0	34	83	158	207	188	0	240	170
22	112	35	7	0	0	83	158	207	188	0	236	170
23	112	35	49	0	0	83	160	207	194	0	233	170
24	112	35	81	0	0	83	164	207	207	0	230	170
25	112	35	92	0	0	83	164	207	220	0	230	164
26	107	35	100	0	97	83	164	214	222	0	217	158
27	107	63	118	29	97	83	164	214	230	0	217	158
28	107	97	128	88	97	83	164	207	233	0	217	158
29	107	74	110	97	0	78	164	200	233	32	200	146
30	107	53	46	59	0	81	164	200	233	70	200	158
31	107	0	28	28	0	88	0	200	0	140	200	0

Daily discharge, in second-feet, of Central Oregon canal near Bend, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	152	123	0	0	0	0	83	170	8	246	272	38
2.....	146	42	0	0	0	10	92	170	74	240	4	102
3.....	134	0	8	0	0	10	97	170	112	240	0	207
4.....	123	0	8	0	0	8	97	170	35	220	0	233
5.....	123	0	0	0	0	0	92	164	134	214	0	233
6.....	123	0	0	0	14	8	92	164	200	214	0	233
7.....	123	0	0	57	42	0	92	164	233	226	0	233
8.....	123	0	0	88	20	35	112	170	246	240	0	233
9.....	112	0	0	35	0	57	112	170	246	259	0	233
10.....	112	0	0	0	0	88	112	170	246	259	0	233
11.....	112	0	0	14	0	88	112	170	246	259	0	220
12.....	112	0	0	42	0	97	112	170	252	259	32	220
13.....	112	42	8	22	0	35	112	170	252	259	134	220
14.....	112	42	17	22	17	14	112	170	252	259	194	214
15.....	112	0	14	35	49	42	112	170	252	259	220	200
16.....	123	0	61	35	57	38	112	170	252	272	233	194
17.....	123	38	83	35	70	35	112	182	252	272	240	194
18.....	123	57	83	35	83	35	112	188	252	272	246	194
19.....	123	83	0	0	88	65	112	194	252	272	246	146
20.....	123	112	0	0	83	102	134	207	246	272	259	134
21.....	123	112	0	0	74	88	140	220	233	272	259	182
22.....	123	0	0	0	25	65	158	226	188	272	259	188
23.....	123	0	0	42	0	42	158	240	182	272	259	194
24.....	123	0	0	14	12	49	158	233	214	272	259	188
25.....	123	0	0	0	12	53	158	240	220	272	259	194
26.....	123	0	0	0	17	57	158	246	220	272	259	182
27.....	123	0	0	0	46	61	164	88	220	272	259	182
28.....	123	0	0	0	0	61	170	0	233	272	88	182
29.....	118	0	0	0	0	61	170	0	240	272	35	170
30.....	123	0	0	42	0	61	170	0	246	272	35	170
31.....	123	0	0	14	0	74	0	0	272	35	0	0

NOTE.—Daily discharge determined from two rating curves applicable as follows: 1905 and 1906, well defined above 20 second-feet; 1907 to 1910, well defined above 40 second-feet.

Monthly discharge of Central Oregon canal near Bend, Oreg., for 1905-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
June.....	74	0	36.6	2,180	B.
July.....	48	0	19.5	1,200	B.
August.....	48	0	26.8	1,650	B.
September.....	70	20	43.4	2,580	A.
The period.....				7,610	
1905-6.					
October.....	105	0	45.9	2,820	A.
November.....	82	16	65.6	3,900	B.
December.....	94	0	54.8	3,370	B.
January.....	96	0	35.2	2,160	B.
February.....	105	0	26.2	1,460	B.
March.....	74	0	28	1,720	A.
April.....	70	12	49.6	2,950	A.
May.....	74	0	58	3,570	A.
June.....	97	70	86.5	5,150	A.
July.....	138	103	118	7,260	A.
August.....	138	124	131	8,060	A.
September.....	138	130	134	7,970	A.
The year.....	138	0	69.4	50,400	

Monthly discharge of Central Oregon canal near Bend, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906-7.					
October.....	133	118	128	7,870	A.
November.....	114	0	48.5	2,890	A.
December.....	100	47	73.8	4,540	A.
January.....	65	0	17.7	1,090	B.
February.....	97	0	50	2,780	B.
March.....	96	34	83.5	5,130	A.
April.....	112	94	100	5,950	A.
May.....	146	98	126	7,750	A.
June.....	182	128	148	8,810	A.
July.....	187	0	121	7,440	A.
August.....	194	112	156	9,590	A.
September.....	134	92	118	7,020	A.
The year.....	194	0	97.5	70,900	
1907-8.					
October.....	134	0	104	6,400	A.
November.....	118	41	104	6,190	A.
December.....	118	0	69.3	4,260	A.
January.....	102	0	32	1,970	B.
February.....	100	0	15.7	903	B.
March.....	118	0	23.3	1,430	B.
April.....	112	57	86.4	5,140	A.
May.....	146	112	136	8,360	A.
June.....	170	146	158	9,400	A.
July.....	207	170	201	12,400	A.
August.....	225	194	205	12,600	A.
September.....	194	176	185	11,000	A.
The year.....	225	0	110	80,000	
1908-9.					
October.....	176	107	141	8,670	A.
November.....	107	35	56.1	3,340	A.
December.....	125	0	43.1	2,650	B.
January.....	97	0	9.71	597	B.
February.....	97	0	39.1	2,170	B.
March.....	97	32	72.6	4,460	A.
April.....	164	88	128	7,620	A.
May.....	214	164	194	11,900	A.
June.....	240	25	191	11,400	A.
July.....	256	0	144	8,850	A.
August.....	246	172	224	13,800	A.
September.....	200	146	172	10,200	A.
The year.....	256	0	118	85,700	
1909-10.					
October.....	152	112	122	7,500	A.
November.....	123	0	21.7	1,290	A.
December.....	83	0	9.1	560	B.
January.....	88	0	17.2	1,060	B.
February.....	88	0	25.3	1,410	B.
March.....	102	0	46.4	2,850	A.
April.....	170	83	124	7,380	A.
May.....	246	0	160	9,840	A.
June.....	252	8	208	12,400	A.
July.....	272	214	258	15,900	A.
August.....	272	0	132	8,120	A.
September.....	233	38	192	11,400	A.
The year.....	272	0	110	79,700	

PILOT BUTTE CANAL NEAR BEND, OREG.

Location.—In sec. 7, T. 18 S., R. 12 E., at a point in the canal directly opposite gaging station on Central Oregon canal, about 2 miles south of Bend and $\frac{1}{2}$ mile below point where waters are divided between this canal and Central Oregon canal.

Records presented.—March 6, 1905, to September 30, 1910.

Gage.—Vertical staff on right bank directly opposite gage in flume of Central Oregon canal.

Channel.—Gage section in rock; practically permanent.

Discharge measurements.—Made by wading at gage or from highway bridge half a mile below gage.

Winter flow.—Not affected by ice. Canal operated intermittently during winter to provide water for stock and domestic uses.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by Central Oregon Irrigation Co.

Discharge measurements of Pilot Butte canal near Bend, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec. ft.</i>	1907.		<i>Feet.</i>	<i>Sec. ft.</i>
May 17	Ivan Landes.....	1.70	22.1	Apr. 4	I. E. Oakes.....	2.10	65
June 22	do.....	2.11	61.7				
Aug. 10	do.....	2.30	80.8	1908.			
Sept. 22	do.....	2.03	49.8	Apr. 4	H. D. McGlashan.....	2.10	67
Nov. 16	do.....	2.02	56.6				
1906.				1910.			
Apr. 18	Ivan Landes.....	1.85	37	June 21	L. R. Allen.....	2.84	190
May 18	do.....	2.10	62	July 6	do.....	2.85	191
June 10	do.....	2.30	95	Sept. 18	Allen and Davenport...	2.53	129
18	L. R. Allen.....	2.30	99				
19	J. C. Stevens.....	2.30	99				

Daily gage height, in feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.....							1.92		1.1	0.0	1.4	2.22
2.....							1.78		1.15	1.25	.7	2.38
3.....							1.78		1.12	1.25	1.4	2.38
4.....							1.78		1.15	1.25	1.4	2.4
5.....							1.78		1.15	1.25	1.4	2.4
6.....						1.72			.6	1.25	1.4	2.3
7.....									1.12	.0	1.4	2.2
8.....						1.72			1.05	.0	1.4	2.35
9.....						1.73			1.1	1.25	.0	2.2
10.....						1.73			1.1	1.16	1.4	2.15
11.....						1.47			1.1	1.35	.0	2.2
12.....						1.47			1.1	1.0	1.4	2.3
13.....						1.47			1.1	.98	.0	2.25
14.....						1.64			1.1	1.3	1.4	2.2
15.....						1.64			.55	.0	.35	2.18
16.....						1.76			1.15	1.2	1.4	2.2
17.....						1.76			1.18	1.35	1.4	2.22
18.....						2.0			1.15	1.05	.0	2.25
19.....						2.0			1.15	1.12	1.45	2.25
20.....						1.34			.4	1.4	1.4	2.25
21.....						1.34			.4	1.4	1.4	2.2
22.....						1.72			1.25	.0	1.38	2.2
23.....						1.81			1.25	1.4	1.38	2.22
24.....						1.8			1.25	1.4	1.4	2.25
25.....						1.8			1.25	1.4	1.35	2.24
26.....						1.8			1.25	.8	1.4	2.22
27.....						1.8			1.25	1.5	1.38	2.22
28.....						1.92			1.12	1.35	1.4	2.3
29.....						1.92			1.25	.0		2.25
30.....						1.92			1.25	1.4		2.28
31.....						1.92			1.25	1.4		

Daily gage height, in feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	2.25	2.05	1.65	-----	1.95	-----	1.85	2.05	2.15	2.44	2.60	2.28
2	2.22	2.05	1.65	-----	1.95	1.85	1.50	2.05	2.15	2.44	2.62	2.45
3	1.12	2.05	1.65	0.88	-----	1.95	1.50	2.05	2.15	2.44	2.60	2.46
4	2.25	2.05	1.8	1.85	-----	1.90	1.62	2.10	2.20	2.44	2.60	2.46
5	2.25	2.05	1.95	.98	-----	1.85	1.50	2.15	2.30	2.44	2.60	2.46
6	2.25	2.05	1.95	1.95	-----	1.85	1.50	2.15	2.30	2.44	2.60	2.46
7	2.25	2.05	1.95	1.95	-----	1.85	1.62	2.15	2.30	2.51	2.60	2.46
8	2.25	2.05	1.8	-----	1.95	1.82	1.62	2.15	2.30	2.56	2.60	2.46
9	2.25	2.05	1.95	-----	1.95	1.73	1.84	2.15	2.30	2.60	2.60	2.46
10	2.25	2.05	1.95	1.90	1.95	1.82	2.18	2.22	2.30	2.60	2.60	2.46
11	2.25	2.05	1.65	1.80	1.95	-----	2.30	2.35	2.30	2.60	2.60	2.46
12	2.25	2.05	1.6	.95	1.95	-----	2.30	2.35	2.30	2.60	2.60	2.46
13	2.25	2.05	1.78	-----	1.85	-----	2.05	2.40	2.30	2.63	2.60	2.46
14	2.25	2.05	1.95	-----	1.85	-----	2.05	2.40	2.30	2.63	2.60	2.46
15	2.25	2.05	1.6	-----	1.85	-----	2.05	2.40	2.30	2.60	2.60	2.46
16	2.25	2.05	.8	-----	1.85	-----	2.00	2.40	2.30	2.60	2.60	2.46
17	2.25	2.05	.0	-----	1.85	-----	2.45	2.40	2.30	2.60	2.60	2.46
18	2.18	2.05	1.85	-----	1.85	-----	2.45	2.05	2.30	2.60	2.60	2.46
19	2.2	2.05	1.95	-----	1.85	-----	1.95	2.05	2.30	2.60	2.60	2.46
20	2.18	2.05	1.95	-----	1.85	-----	1.95	2.05	2.30	2.59	2.59	2.46
21	2.18	2.0	1.95	-----	1.85	-----	1.95	2.10	2.30	2.60	2.60	2.46
22	2.12	2.0	.98	-----	1.85	-----	1.95	2.15	2.30	2.60	2.60	2.46
23	2.1	2.0	.0	-----	1.85	-----	1.78	2.15	2.30	2.59	2.60	2.43
24	2.1	2.0	.0	-----	1.85	1.78	2.05	2.15	2.37	2.63	2.60	2.46
25	2.1	1.87	.0	-----	1.85	1.95	2.05	2.15	2.42	2.60	2.60	2.46
26	2.1	1.82	1.92	1.50	1.90	1.90	2.05	2.15	2.44	2.60	-----	2.46
27	2.1	2.0	1.95	1.75	.97	1.95	2.05	2.20	2.44	2.60	2.60	2.46
28	2.1	2.0	.98	.90	.98	-----	2.05	2.20	2.44	2.59	2.58	2.46
29	2.1	2.0	.0	.95	-----	.85	2.05	2.35	2.44	2.60	-----	2.46
30	2.05	2.0	.0	1.80	-----	-----	2.05	2.40	2.44	2.58	2.18	2.44
31	2.05	-----	.0	1.70	-----	-----	-----	1.78	-----	2.35	1.91	-----
1906-7.												
1	2.46	1.52	1.40	1.4	-----	1.86	1.86	2.30	2.35	1.60	2.70	2.30
2	2.45	-----	1.36	1.4	-----	1.86	1.86	2.30	2.70	1.60	2.70	2.40
3	2.43	1.37	1.40	1.4	-----	1.86	1.98	2.30	2.70	2.70	2.70	2.40
4	2.44	1.34	1.59	1.4	-----	1.86	2.10	2.30	2.70	2.68	2.70	2.40
5	2.46	1.38	1.79	1.4	-----	1.86	2.10	2.35	2.70	2.68	2.70	2.40
6	2.46	1.38	1.60	1.4	-----	1.86	2.10	2.40	2.70	2.70	2.70	2.40
7	2.46	1.80	1.75	1.4	-----	1.86	2.10	2.40	2.56	-----	2.70	2.40
8	2.46	2.26	1.90	1.29	-----	1.86	2.10	2.40	2.42	-----	2.70	2.35
9	2.46	-----	1.90	-----	-----	1.86	2.10	2.40	2.51	-----	2.70	2.30
10	2.46	-----	1.64	-----	1.40	-----	1.86	2.10	2.40	2.62	-----	2.30
11	2.45	1.10	1.40	-----	1.66	1.86	2.10	2.40	2.62	2.20	2.70	2.20
12	2.44	1.36	1.40	-----	1.86	1.86	2.10	2.40	2.62	2.00	2.70	2.15
13	2.44	1.14	1.40	-----	1.88	1.86	2.10	2.40	2.62	1.90	2.70	2.40
14	2.46	1.06	1.39	-----	1.88	1.86	2.10	2.40	2.62	2.20	2.70	2.60
15	2.46	1.02	1.42	-----	1.88	1.86	2.10	2.40	2.62	2.45	2.70	2.40
16	2.44	1.48	1.74	-----	1.88	1.86	2.10	2.40	2.62	2.58	2.70	2.40
17	2.46	1.38	1.90	-----	1.90	1.86	2.10	2.38	2.62	2.72	2.69	2.40
18	2.46	1.42	1.90	-----	1.88	1.86	2.10	2.40	2.62	2.70	2.32	2.45
19	2.46	1.42	1.92	-----	1.90	1.86	2.10	2.50	2.61	2.70	2.55	2.45
20	2.46	1.51	1.92	-----	1.91	1.86	2.10	2.48	2.61	2.70	2.55	2.45
21	2.46	1.74	1.92	-----	1.90	1.86	2.10	2.49	2.65	2.70	2.55	2.18
22	2.46	1.59	1.92	-----	1.95	1.86	2.15	2.49	2.70	2.70	2.60	2.40
23	1.73	1.64	1.92	-----	2.00	1.86	2.25	2.48	2.70	2.70	2.60	2.40
24	1.62	2.10	1.92	-----	1.85	1.86	2.30	2.45	2.70	2.70	2.50	2.40
25	2.29	2.10	1.92	-----	1.78	1.86	2.30	2.46	2.70	2.70	2.55	2.35
26	2.30	2.10	1.92	-----	1.86	1.86	2.30	2.39	2.69	2.70	2.55	2.45
27	2.30	1.75	1.92	-----	1.86	1.86	2.30	2.40	2.69	2.70	2.65	2.45
28	2.30	1.40	1.92	-----	1.86	1.86	2.30	2.38	2.69	2.70	2.50	2.40
29	2.30	1.38	1.92	-----	-----	1.86	2.30	2.30	2.70	2.70	2.45	2.42
30	2.30	1.40	1.92	-----	-----	1.86	2.30	2.30	2.70	2.70	2.45	2.38
31	2.30	-----	1.66	-----	-----	1.86	-----	2.38	-----	2.70	2.45	-----

Daily gage height, in feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	2.35	1.52	0.15	-----	-----	2.20	2.10	2.50	2.50	2.80	2.90	2.80
2.....	2.20	2.55	.15	-----	-----	2.20	2.10	2.50	2.50	2.80	2.90	^a 2.80
3.....	2.32	2.55	.15	0.80	-----	2.20	2.10	2.50	2.50	2.80	2.90	2.80
4.....	1.40	2.55	.15	1.90	-----	2.20	2.15	2.50	2.50	2.80	2.90	2.80
5.....	2.40	2.40	.15	2.00	0.75	2.10	2.20	2.50	2.60	2.80	2.95	2.80
6.....	1.98	2.40	.15	2.05	2.00	-----	2.20	2.50	2.60	2.80	2.95	2.80
7.....	2.42	-----	-----	1.40	2.00	-----	2.20	2.50	2.60	2.85	2.95	2.65
8.....	.40	2.40	1.20	1.50	2.00	2.10	2.20	2.50	2.60	2.90	2.95	2.65
9.....	1.40	1.20	-----	1.50	1.00	2.20	2.20	1.25	2.00	2.90	2.98	2.50
10.....	1.85	2.40	.15	1.50	-----	2.20	2.20	2.50	2.60	2.95	2.98	2.60
11.....	2.25	2.40	.15	2.10	-----	2.20	2.20	2.50	2.55	2.95	2.98	2.60
12.....	2.30	2.40	.15	1.50	-----	2.10	2.25	2.50	2.60	2.95	2.98	2.60
13.....	2.40	-----	.15	2.10	-----	2.10	2.30	2.50	2.60	2.95	2.90	2.60
14.....	2.30	-----	1.22	1.50	-----	2.10	2.35	2.50	2.60	2.95	2.85	2.60
15.....	2.30	-----	2.70	1.50	-----	2.10	2.40	2.50	2.60	2.95	2.85	2.60
16.....	2.55	2.40	1.15	1.50	.90	2.10	2.40	2.50	2.60	2.95	2.88	2.60
17.....	2.30	2.40	-----	1.30	2.00	2.10	2.40	2.50	2.60	2.95	2.90	2.60
18.....	2.10	2.40	-----	1.65	2.00	2.10	2.40	2.50	2.62	2.95	2.90	2.60
19.....	2.10	2.40	-----	2.00	2.00	2.00	2.40	1.25	2.65	2.95	2.95	2.60
20.....	2.48	.05	1.00	2.00	-----	2.00	2.40	2.25	2.65	2.95	2.95	2.60
21.....	2.40	.15	2.20	-----	-----	2.00	2.40	2.50	2.70	2.92	2.95	2.60
22.....	2.60	.15	2.20	-----	-----	2.00	2.40	2.50	2.70	2.95	2.95	2.60
23.....	2.60	2.15	2.20	-----	-----	2.05	2.40	2.50	2.70	2.95	2.92	2.60
24.....	2.60	2.30	2.20	-----	-----	2.10	2.40	2.50	2.70	2.95	2.90	2.60
25.....	2.55	2.30	2.20	.90	2.15	2.10	2.40	-----	2.72	2.95	2.90	2.60
26.....	2.55	2.25	2.20	1.90	2.20	1.05	2.40	2.50	2.75	2.95	2.90	2.60
27.....	2.55	.31	2.20	1.00	2.20	1.10	2.40	2.50	2.75	2.95	2.90	2.60
28.....	2.55	2.25	-----	-----	2.20	2.15	2.35	2.50	2.75	2.95	2.90	2.60
29.....	2.55	-----	-----	-----	2.20	2.10	2.38	2.50	2.75	2.95	2.85	2.55
30.....	2.55	.08	-----	-----	-----	2.10	2.50	2.50	2.75	2.95	2.80	2.55
31.....	2.55	-----	-----	-----	-----	2.10	-----	2.50	-----	2.90	2.80	-----
1908-9.												
1.....	2.55	2.40	1.25	-----	2.05	2.05	2.15	2.4	2.75	2.85	2.38	2.6
2.....	2.55	2.40	1.25	-----	1.02	2.05	2.15	2.4	2.75	2.9	2.55	2.6
3.....	2.55	2.40	1.25	-----	-----	2.05	2.15	2.4	2.75	2.9	2.6	2.6
4.....	2.55	2.40	1.25	1.9	-----	2.05	2.15	2.55	2.75	2.9	2.65	2.55
5.....	2.55	-----	1.25	.85	-----	2.05	2.15	2.55	2.75	2.92	2.88	2.55
6.....	2.55	-----	1.25	-----	-----	2.05	2.15	2.55	2.75	2.95	2.8	2.55
7.....	2.55	1.15	1.62	-----	-----	2.05	2.15	2.55	2.75	2.95	2.88	2.55
8.....	2.55	1.28	2.00	-----	-----	2.05	2.2	2.55	2.75	2.95	2.9	2.55
9.....	2.55	1.25	1.50	-----	-----	2.05	2.25	2.55	2.75	2.95	2.88	2.55
10.....	2.52	1.25	1.50	-----	-----	2.05	2.25	2.55	2.75	2.9	2.9	2.55
11.....	2.50	1.25	1.50	-----	-----	2.05	2.3	2.55	2.75	2.95	2.88	2.55
12.....	2.50	1.25	2.05	-----	-----	2.05	2.3	2.55	2.75	2.95	2.9	2.55
13.....	2.50	1.25	1.85	-----	1.02	2.05	2.3	2.55	2.78	2.95	2.9	2.55
14.....	2.50	1.78	1.65	-----	1.02	2.05	2.3	2.55	2.8	2.95	2.9	2.55
15.....	2.50	1.78	1.65	-----	-----	2.05	2.3	2.7	2.8	2.95	2.9	2.52
16.....	2.50	1.25	1.65	-----	-----	2.05	2.3	2.7	2.8	2.95	2.9	2.5
17.....	2.50	1.25	1.30	-----	2.05	2.05	2.3	2.7	2.8	2.95	2.9	2.5
18.....	2.50	2.00	-----	-----	2.05	2.05	2.3	2.7	2.65	2.95	2.9	2.5
19.....	2.50	1.25	-----	-----	2.05	1.8	2.3	2.7	2.8	-----	2.9	2.5
20.....	2.50	1.25	-----	-----	-----	1.8	2.3	2.7	2.8	-----	2.88	2.5
21.....	2.40	1.80	-----	-----	-----	1.72	2.3	2.7	2.8	-----	2.9	2.5
22.....	2.40	1.80	-----	-----	.9	1.65	2.35	2.7	2.8	-----	2.9	2.5
23.....	2.35	1.25	-----	-----	2.05	1.65	2.4	2.7	2.8	-----	2.9	2.5
24.....	2.30	1.25	-----	-----	2.05	1.52	2.4	2.7	2.7	-----	2.9	2.5
25.....	2.30	1.25	-----	-----	2.05	1.72	2.4	2.7	2.75	-----	2.85	2.48
26.....	2.40	1.25	2.05	-----	2.05	2.05	2.4	2.75	2.8	-----	2.85	2.5
27.....	2.40	1.25	1.02	-----	2.05	2.15	2.4	2.75	2.8	-----	2.75	2.5
28.....	2.40	2.25	-----	-----	2.05	2.08	2.4	2.75	2.8	-----	2.4	2.38
29.....	2.40	2.25	-----	-----	-----	2.0	2.4	2.75	2.8	1.88	2.6	2.42
30.....	2.40	1.62	-----	-----	-----	2.0	2.4	2.75	2.8	2.12	2.6	2.45
31.....	2.40	-----	-----	-----	-----	2.08	-----	2.75	-----	2.3	2.6	-----

^a For one-half day.

Daily gage height, in feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	wpr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	2.4	1.2		1.90	0.82		2.15	2.60	2.55	2.85	2.90	2.75
2	2.35	1.12					2.15	2.60	2.68	2.85	2.62	2.75
3	2.35	1.25					2.15	2.55	2.70	2.85	2.65	2.75
4	2.35	1.3			.90		2.15	2.35	2.68	2.85	2.72	2.75
5	2.35	1.3			1.75	1.00	2.15	2.35	2.78	2.85	2.80	2.75
6	2.05	1.48			1.70	2.00	2.15	2.35	2.80	2.85	2.80	2.75
7	2.15	1.55			1.95	1.00	2.15	2.60	2.80	2.85	2.80	2.75
8	2.35	1.55					2.15	2.60	2.80	2.85	2.80	2.75
9	2.35	.78					.98	2.15	2.60	2.80	2.85	2.75
10	2.35						1.95	2.15	2.55	2.80	2.85	2.75
11	2.35	.8				2.00	2.15	2.50	2.82	2.85	2.80	2.60
12	2.35	1.85	0.65			2.00	2.15	2.50	2.85	2.85	2.75	2.60
13	2.35	2.1	1.3			2.00	2.15	2.50	2.85	2.85	2.80	2.60
14	2.38	1.1	.95			2.00	2.15	2.50	2.85	2.85	2.90	2.60
15	2.4				1.90	1.70	2.15	2.50	2.85	2.85	2.90	2.60
16	2.4				2.00	1.55	2.15	2.50	2.85	2.88	2.90	2.55
17	2.4	1.7		1.90	1.98	1.55	2.15	2.50	2.85	2.90	2.90	2.55
18	2.4	1.6		1.00	.98	1.55	2.20	2.50	2.85	2.90	2.90	2.55
19	2.35	1.9				1.55	2.25	2.55	2.85	2.90	2.90	2.40
20	2.38	1.1				1.55	2.25	2.60	2.85	2.90	2.90	2.28
21	2.3					1.65	2.28	2.60	2.85	2.90	2.90	2.55
22	2.25			.70		1.65	2.30	2.60	2.85	2.90	2.90	2.55
23	2.25	1.05		1.40		1.65	2.35	2.65	2.85	2.90	2.90	2.55
24	2.25	2.1			.80	1.70	2.45	2.70	2.85	2.90	2.90	2.52
25	2.25	2.1			.80	2.10	2.52	2.70	2.85	2.90	2.90	2.50
26	2.25	.65			1.75	2.10	2.58	2.75	2.85	2.90	2.90	2.50
27	2.25				1.48	2.10	2.60	1.40	2.85	2.90	2.90	2.50
28	2.25	.65				2.10	2.60		2.85	2.90	2.85	2.50
29	2.22	1.3				2.10	2.60	1.05	2.85	2.90	2.80	2.48
30		1.3				1.65	2.60	2.22	2.85	2.90	2.80	2.50
31	.70		1.85	1.65		1.62		2.35		2.90	2.78	

NOTE.—Readings June 1 to Aug. 28, 1905, were on a 15-foot weir above waste gate. Washout in flume July 19-28, 1909.

Daily discharge, in second-feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1							41		56.8	0.0	81.8	83
2							29		60.7	68.6	29.1	108
3							29		58.4	68.6	81.4	108
4							29		60.7	68.6	81.4	111
5							29		60.7	68.6	81.4	111
6						24			23.0	68.6	81.4	95
7						24			58.4	.0	81.4	80
8						24			53.0	.0	81.4	103
9						25			56.8	68.6	.0	80
10						25			56.8	61.5	81.4	73
11						13			56.8	77.0	.0	80
12						13			56.8	49.3	81.4	95
13						13			56.8	47.8	.0	88
14						20			56.8	72.7	81.4	80
15						20			20.2	.0	10.0	77
16						27			60.7	64.6	81.4	80
17						27		23	63.0	77.0	81.4	83
18						49			60.7	53.0	.0	88
19						49			60.7	58.4	85.7	88
20						8			12.6	81.4	81.4	88
21						8			12.6	81.4	81.4	80
22						24			68.6	.0	80.0	80
23						31			68.6	81.4	80.0	83
24						30			68.6	81.4	81.4	88
25						30			68.6	81.4	77.0	86
26						30			68.6	35.0	81.4	83
27						30			68.6	89.9	80.0	83
28						41			58.4	77.0	81.4	95
29						41			68.6	.0	81.4	88
30						41			68.6	81.4	81.4	92
31						41			81.4	81.4	81.4	

Daily discharge, in second-feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	88	60	24	0	48	0	38	60	73	117	144	92
2.....	83	60	24	0	48	38	16	60	73	117	148	119
3.....	5	60	24	3	0	48	16	60	73	117	144	121
4.....	88	60	34	38	0	42	22	66	80	117	144	121
5.....	88	60	48	4	0	38	16	73	95	117	144	121
6.....	88	60	48	48	0	38	16	73	95	117	144	121
7.....	88	60	48	48	0	38	22	73	95	129	144	121
8.....	88	60	34	0	48	36	22	73	95	137	144	121
9.....	88	60	48	0	48	29	37	73	95	144	144	121
10.....	88	60	48	42	48	36	77	83	95	144	144	121
11.....	88	60	24	34	48	0	95	103	95	144	144	121
12.....	88	60	21	4	48	0	95	103	95	144	144	121
13.....	88	60	33	0	38	0	60	111	95	144	144	121
14.....	88	60	48	0	38	0	60	111	95	144	144	121
15.....	88	60	21	0	38	0	60	111	95	144	144	121
16.....	88	60	2	0	38	0	53	111	95	144	144	121
17.....	88	60	0	0	38	0	119	111	95	144	144	121
18.....	77	60	38	0	38	0	119	60	95	144	144	121
19.....	80	60	48	0	38	0	48	60	95	144	144	121
20.....	77	60	48	0	38	0	48	60	95	142	142	121
21.....	77	53	48	0	38	0	48	66	95	144	144	121
22.....	69	53	4	0	38	0	48	73	95	144	144	121
23.....	66	53	0	0	38	0	31	73	95	142	144	121
24.....	66	53	0	0	38	33	60	73	106	144	144	121
25.....	66	40	0	0	38	48	60	73	114	144	144	121
26.....	66	36	44	16	42	42	60	73	117	144	0	121
27.....	66	53	48	30	4	48	60	80	117	144	144	121
28.....	66	53	4	3	4	0	60	80	117	142	141	121
29.....	66	53	0	4	-----	2	60	103	117	144	0	121
30.....	60	53	0	34	-----	0	60	111	117	141	77	117
31.....	60	-----	0	27	-----	0	-----	31	-----	103	43	-----
1906-7.												
1.....	121	17	12	12	0	39	39	95	103	21	162	95
2.....	119	0	11	12	0	39	39	95	162	21	162	111
3.....	116	11	12	12	0	39	51	95	162	162	162	111
4.....	117	10	20	12	0	39	66	95	162	158	162	111
5.....	121	11	33	12	0	39	66	103	162	158	162	111
6.....	121	11	21	12	-----	39	66	111	162	162	162	111
7.....	121	34	30	12	-----	39	66	111	137	0	162	111
8.....	121	89	42	9	-----	39	66	111	114	0	162	103
9.....	121	0	42	0	-----	39	66	111	129	0	162	95
10.....	121	0	23	0	12	39	66	111	148	0	162	95
11.....	119	5	12	0	25	39	66	111	148	80	162	80
12.....	117	11	12	0	39	39	66	111	148	80	162	73
13.....	117	6	12	0	40	39	66	111	148	42	162	111
14.....	121	5	12	0	40	39	66	111	148	80	162	144
15.....	121	4	13	0	40	39	66	111	148	119	162	111
16.....	117	15	30	0	40	39	66	111	148	141	162	111
17.....	121	11	42	0	42	39	66	103	148	166	160	111
18.....	121	13	42	0	40	39	66	111	148	162	98	119
19.....	121	13	44	0	42	39	66	127	146	162	136	119
20.....	121	16	44	0	43	39	66	124	146	162	136	119
21.....	121	30	44	0	42	39	66	125	153	162	136	77
22.....	121	20	44	0	48	39	73	125	162	162	144	111
23.....	29	23	44	0	53	39	88	124	162	162	144	111
24.....	22	66	44	0	38	39	95	119	162	162	127	111
25.....	94	66	44	0	33	39	95	121	162	162	136	103
26.....	95	66	44	0	39	39	95	109	160	162	136	119
27.....	95	30	44	0	39	39	95	111	160	162	153	119
28.....	95	12	44	0	39	39	95	108	160	162	127	111
29.....	95	11	44	0	-----	39	95	95	162	162	119	114
30.....	95	12	44	0	-----	39	95	95	162	162	119	108
31.....	95	-----	25	0	-----	39	-----	108	-----	162	119	-----

Daily discharge, in second-feet, of Pilot Butte canal near Bend, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	103	17	0	0	0	80	66	127	127	182	202	182
2.....	80	136	0	0	0	80	66	127	127	182	202	91
3.....	98	136	0	2	0	80	66	127	127	182	202	182
4.....	12	136	0	42	0	80	73	127	127	182	202	182
5.....	111	111	0	53	2	66	80	127	144	182	212	182
6.....	51	111	0	60	53	0	80	127	144	182	212	182
7.....	114	0	0	12	53	0	80	127	144	192	212	153
8.....	1	111	7	16	53	66	80	127	144	202	212	153
9.....	12	7	0	16	4	80	80	8	144	202	218	127
10.....	38	111	0	16	0	80	80	127	144	212	218	144
11.....	88	111	0	66	0	80	80	127	136	212	218	144
12.....	95	111	0	16	0	66	88	127	144	212	218	144
13.....	111	0	0	66	0	66	95	127	144	212	202	144
14.....	95	0	7	16	0	66	103	127	144	212	192	144
15.....	95	0	162	16	0	66	111	127	144	212	192	144
16.....	136	111	6	16	3	66	111	127	144	212	198	144
17.....	95	111	0	9	53	66	111	127	144	212	202	144
18.....	66	111	0	24	53	66	111	127	148	212	202	144
19.....	66	111	0	53	53	53	111	8	153	212	212	144
20.....	124	0	4	53	0	53	111	88	153	212	212	144
21.....	111	0	80	0	0	53	111	127	162	206	212	144
22.....	144	0	80	0	0	53	111	127	162	212	212	144
23.....	144	73	80	0	0	60	111	127	162	212	206	144
24.....	144	95	80	0	0	66	111	127	162	212	202	144
25.....	136	95	80	3	73	66	111	0	166	212	202	144
26.....	136	83	80	42	80	4	111	127	172	212	202	144
27.....	136	1	80	4	80	5	111	127	172	212	202	144
28.....	136	88	0	0	80	73	103	127	172	212	202	144
29.....	136	0	0	0	80	66	108	127	172	212	192	136
30.....	136	0	0	0	-----	66	127	127	172	212	182	136
31.....	136	0	0	0	-----	66	-----	127	-----	202	182	-----
1908-9.												
1.....	136	111	8	0	60	60	73	111	172	192	108	144
2.....	136	111	8	0	4	60	73	111	172	202	136	144
3.....	136	111	8	0	0	60	73	111	172	202	144	144
4.....	136	111	8	42	0	60	73	136	172	202	153	136
5.....	136	0	8	2	0	60	73	136	172	206	198	136
6.....	136	0	8	0	0	60	73	136	172	212	182	136
7.....	136	6	22	0	0	60	73	136	172	212	198	136
8.....	136	9	53	0	0	60	80	136	172	212	202	136
9.....	136	8	16	0	0	60	88	136	172	212	198	136
10.....	130	8	16	0	0	60	88	136	172	202	202	136
11.....	127	8	16	0	0	60	95	136	172	212	198	136
12.....	127	8	60	0	0	60	95	136	172	212	202	136
13.....	127	8	38	0	4	60	95	136	178	212	202	136
14.....	127	32	24	0	4	60	95	136	182	212	202	136
15.....	127	32	24	0	0	60	95	162	182	212	202	130
16.....	127	8	24	0	0	60	95	162	182	212	202	127
17.....	127	8	9	0	60	60	95	162	182	212	202	127
18.....	127	53	0	0	60	60	95	162	153	212	202	127
19.....	127	8	0	0	60	34	95	162	182	0	202	127
20.....	127	8	0	0	0	34	95	162	182	0	198	127
21.....	111	34	0	0	0	28	95	162	182	0	202	127
22.....	111	34	0	0	3	24	103	162	182	0	202	127
23.....	103	8	0	0	60	24	111	162	182	0	202	127
24.....	95	8	0	0	60	17	111	162	162	0	202	127
25.....	95	8	0	0	60	28	111	162	172	0	192	124
26.....	111	8	60	0	60	60	111	172	182	0	192	127
27.....	111	8	4	0	60	73	111	172	182	0	172	127
28.....	111	88	0	0	60	63	111	172	182	0	111	108
29.....	111	88	0	0	-----	53	111	172	182	40	144	114
30.....	111	22	0	0	-----	53	111	172	182	69	144	119
31.....	111	-----	0	0	-----	63	-----	172	-----	95	144	-----

Daily discharge, in second-feet, of Pilot Butte Canal near Bend, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	111	7	0	42	2	0	73	144	136	192	202	172
2.....	103	5	0	0	0	0	73	144	158	192	148	172
3.....	103	8	0	0	0	0	73	136	162	192	153	172
4.....	103	9	0	0	3	0	73	103	158	192	166	172
5.....	103	9	0	0	30	4	73	103	178	192	182	172
6.....	60	15	0	0	27	53	73	103	182	192	182	172
7.....	73	18	0	0	48	4	73	144	182	192	182	172
8.....	103	18	0	0	0	0	73	144	182	192	182	172
9.....	103	2	0	0	0	4	73	144	182	192	182	172
10.....	103	0	0	0	0	48	73	136	182	192	182	172
11.....	103	2	0	0	0	53	73	127	186	192	182	144
12.....	103	38	2	0	0	53	73	127	192	192	172	144
13.....	103	66	9	0	0	53	73	127	192	192	182	144
14.....	108	5	4	0	0	53	73	127	192	192	202	144
15.....	111	0	0	0	42	27	73	127	192	192	202	144
16.....	111	0	0	.....	53	18	73	127	192	198	202	136
17.....	111	27	0	42	51	18	73	127	192	202	202	136
18.....	111	21	0	4	4	18	80	127	192	202	202	136
19.....	103	42	0	0	0	18	88	136	192	202	202	111
20.....	108	5	0	0	0	18	88	144	192	202	202	92
21.....	95	0	0	0	0	24	92	144	192	202	202	136
22.....	88	0	0	2	0	24	95	144	192	202	202	136
23.....	88	4	0	12	0	24	103	153	192	202	202	136
24.....	88	66	0	0	2	27	119	162	192	202	202	130
25.....	88	66	0	0	2	66	130	162	192	202	202	127
26.....	88	2	0	0	30	66	141	172	192	202	202	127
27.....	88	0	0	0	15	66	144	12	192	202	202	127
28.....	88	2	0	0	0	66	144	0	192	202	192	127
29.....	82	9	0	0	.....	66	144	4	192	202	182	124
30.....	0	9	0	0	.....	24	144	83	192	202	182	127
31.....	2	.....	38	23	.....	22	.....	103	.....	202	178	.....

NOTE.—Daily discharge determined as follows: Mar. 6 to May 17, 1905, from fairly well defined rating curve; June 1 to Aug. 28, 1905, by weir formula; Sept. 1, 1905, to Sept. 30, 1910, from curve well defined except for stages below 100 second-feet in 1909 and 1910, for which it is somewhat uncertain.

Monthly discharge of Pilot Butte canal near Bend, Oreg., for 1905-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
June.....	68.6	12.6	55.7	3,310	B.
July.....	89.9	0	56.3	3,460	B.
August.....	85.7	0	66.8	4,110	B.
September.....	111	73	88.6	5,270	
The period.....	.....	.....	.....	16,200	
1905-6.					
October.....	88	5	76.5	4,700	B.
November.....	60	36	56.7	3,370	B.
December.....	48	0	26.1	1,610	B.
January.....	48	0	10.8	664	B.
February.....	48	0	31.4	1,740	A.
March.....	48	0	16.6	1,020	A.
April.....	119	16	52.9	3,150	A.
May.....	111	31	79.7	4,900	A.
June.....	117	73	97	5,770	A.
July.....	144	103	136	8,360	A.
August.....	148	0	129	7,930	A.
September.....	121	92	120	7,140	A.
The year.....	148	0	69.4	50,400	

Monthly discharge of Pilot Butte canal near Bend, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906-7.					
October.....	121	22	108	6,640	A.
November.....	89	0	20.6	1,230	B.
December.....	44	11	31.4	1,930	B.
January.....	12	0	3	184	B.
February.....	53	0	26.2	1,460	A.
March.....	39	39	39	2,400	A.
April.....	95	39	71.4	4,250	A.
May.....	127	95	110	6,760	A.
June.....	162	103	151	8,980	A.
July.....	166	0	118	7,260	A.
August.....	162	98	148	9,100	A.
September.....	144	73	108	6,430	A.
The year.....	166	0	77.9	56,600	
1907-8.					
October.....	144	1	99.5	6,120	A.
November.....	136	0	66.1	3,930	A.
December.....	162	0	24.1	1,480	A.
January.....	66	0	19.4	1,190	B.
February.....	80	0	24.8	1,430	A.
March.....	80	0	61.4	3,780	A.
April.....	127	66	96.6	5,750	A.
May.....	127	0	114	7,010	A.
June.....	172	127	150	8,930	A.
July.....	212	182	204	12,500	A.
August.....	218	182	204	12,500	A.
September.....	182	91	148	8,810	A.
The year.....	218	0	101	73,400	
1908-9.					
October.....	136	95	123	7,560	A.
November.....	111	0	31.8	1,890	B.
December.....	60	0	13.4	824	B.
January.....	42	0	1.4	86.1	B.
February.....	60	0	22	1,220	B.
March.....	73	17	52.7	3,240	A.
April.....	111	73	93.4	5,560	A.
May.....	172	111	150	9,220	A.
June.....	182	153	176	10,500	A.
July.....	212	0	128	7,870	A.
August.....	202	108	182	11,200	A.
September.....	144	108	131	7,800	A.
The year.....	212	0	92.1	67,000	
1909-10.					
October.....	111	0	91.4	5,620	A.
November.....	66	0	15.2	904	B.
December.....	38	0	1.7	105	B.
January.....	42	0	4	246	B.
February.....	53	0	11	611	B.
March.....	66	0	29.6	1,820	A.
April.....	144	73	91.8	5,460	A.
May.....	172	0	121	7,440	A.
June.....	192	136	185	11,000	A.
July.....	202	192	197	12,100	A.
August.....	202	148	189	11,600	A.
September.....	172	92	145	8,630	A.
The year.....	202	0	90.2	65,500	

DESCHUTES RIVER AT LAIDLAW, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 31, T. 16 S., R. 12 E., at the highway bridge in Laidlaw, 9 miles by river below Bend, 3 miles below Tumalo Creek, and below all important diversions.

Records presented.—January 1, 1909, to September 30, 1910.

Drainage area.—Indeterminate.

Gage.—Vertical staff at old highway bridge at Laidlaw; datum lowered 0.87 foot April 18, 1910; all readings reduced to new datum.

Channel.—Gravel; control somewhat shifting; two channels at gage, about two-thirds of the flow passing in the right channel, in which the gage is placed. The channel divides about 200 feet above the bridge.

Discharge measurements.—Made from wagon bridge, $1\frac{1}{2}$ miles above gage, in SE. $\frac{1}{4}$ sec. 6, T. 17 S., R. 12 E.

Winter flow.—Seriously affected by ice only in extremely cold weather.

Diversions.—Two small canals divert water between this station and Bend.

Accuracy.—Results fair from July, 1910; gage heights prior to that date uncertain and fragmentary.

Discharge measurements of Deschutes River at Laidlaw, Oreg., in 1909–10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Fect.</i>	<i>Sec.-ft.</i>	1910.		<i>Fect.</i>	<i>Sec.-ft.</i>
Jan. 1	R. B. Post.....	1.44	1,380	Apr. 18	L. R. Allen.....	1.85	1,870
Apr. 20	.....do.....	1.55	1,520	June 23	.....do.....	1.52	1,430
July 31	.....do.....	1.30	1,200	July 7	.....do.....	1.37	1,220
Oct. 14	.....do.....	1.28	1,160	Sept. 17	Allen and Davenport..	1.35	1,290
Dec. 20	.....do.....	1.26	1,930	.....do.....	.....do.....	1.35	1,280

Daily gage height, in feet, of Deschutes River near Laidlaw, Oreg., for 1909–10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....				1.44	1.52			1.57	1.50	1.32	1.28	1.14
2.....				1.44	1.55			1.57	1.61	1.27	1.26	1.13
3.....				1.44	1.57			1.59	1.83	1.24		
4.....				1.44	1.59		1.55	1.55	1.67	1.25	1.24	1.13
5.....				1.45	1.58		1.55	1.54	1.67	1.27		
6.....				1.45	1.57		1.51	1.55	1.69	1.28		
7.....							1.47	1.56	1.67	1.22		
8.....							1.47	1.54	1.67	1.25		
9.....							1.45	1.55	1.55	1.24	1.08	
10.....							1.47	1.56	1.55	1.26	1.07	
11.....							1.51	1.53	1.58	1.24	1.05	
12.....							1.49	1.54	1.53	1.27		
13.....							1.51	1.52	1.54	1.25		
14.....					1.56		1.53	1.51	1.55		1.06	
15.....				1.46	1.56		1.54	1.47	1.52	1.16	1.04	
16.....				1.47	1.56		1.54	1.49	1.50	1.16	1.05	
17.....				1.57	1.60		1.55	1.46	1.51	1.14		
18.....				1.67	1.62		1.54	1.41	1.50		1.05	1.25
19.....				1.77	1.60		1.56	1.42	1.51	1.55	1.06	1.24
20.....				1.77	1.60		1.56	1.40	1.52	1.52	1.08	1.26
21.....				1.87			1.56	1.36	1.49	1.52	1.08	1.25
22.....				1.79			1.54	1.35	1.47	1.50		1.25
23.....				1.79			1.51	1.36	1.46	1.51	1.11	1.24
24.....				1.77			1.51	1.36	1.44		1.10	1.23
25.....				1.67			1.52	1.38	1.39	1.50	1.13	1.25
26.....				1.67			1.53	1.40	1.41	1.51	1.14	1.25
27.....				1.62			1.55	1.41	1.36		1.15	1.29
28.....				1.57			1.55	1.41	1.37	1.48		1.29
29.....				1.55			1.56	1.40	1.36	1.49		1.28
30.....				1.55			1.55	1.48	1.35	1.44		1.29
31.....				1.55				1.51		1.35		

Daily gage height, in feet, of Deschutes River near Laidlaw, Oreg., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.28	-----	3.94	-----	-----	1.49	-----	1.79	-----	-----	1.50	1.45
2.....	1.26	1.52	-----	1.72	-----	-----	-----	1.81	-----	-----	1.28	1.45
3.....	1.26	1.53	-----	1.68	-----	-----	-----	1.83	-----	-----	1.23	1.35
4.....	1.30	1.52	2.67	1.64	-----	1.43	-----	1.86	-----	-----	1.28	1.35
5.....	1.30	1.54	1.89	1.58	-----	1.44	-----	1.84	-----	-----	1.50	1.30
6.....	1.33	1.55	1.84	1.56	2.18	-----	-----	1.83	-----	-----	1.50	1.30
7.....	1.32	1.54	1.80	1.57	2.15	-----	-----	1.80	-----	-----	1.50	1.30
8.....	1.31	1.60	1.76	1.50	2.15	-----	-----	-----	-----	1.38	1.50	1.30
9.....	1.30	1.58	1.74	1.51	2.07	-----	-----	-----	-----	1.35	1.50	1.30
10.....	1.30	1.58	1.70	1.64	-----	-----	-----	-----	-----	1.35	1.50	1.30
11.....	1.29	1.56	1.75	1.63	-----	-----	-----	-----	-----	1.35	1.50	1.28
12.....	1.30	1.55	1.78	1.67	-----	-----	-----	-----	-----	1.35	1.50	1.30
13.....	1.29	1.55	1.80	1.66	-----	-----	-----	-----	-----	1.35	1.45	1.30
14.....	-----	1.57	1.86	1.58	-----	1.39	-----	-----	-----	1.35	1.35	1.30
15.....	-----	1.54	1.93	1.60	-----	1.40	-----	-----	-----	1.35	1.30	1.32
16.....	-----	1.60	2.17	-----	-----	1.34	-----	-----	-----	1.32	1.30	1.32
17.....	1.35	1.58	1.96	1.63	1.55	1.25	-----	-----	-----	1.32	1.30	1.35
18.....	1.37	1.51	1.85	1.64	1.54	1.29	1.85	-----	-----	1.32	1.30	1.35
19.....	1.33	1.52	1.83	1.64	1.58	-----	1.79	-----	-----	1.32	1.30	1.40
20.....	1.33	1.54	-----	1.63	1.59	-----	1.81	-----	-----	1.30	1.30	1.50
21.....	1.32	2.63	1.80	1.65	1.80	-----	1.80	-----	-----	1.32	1.28	1.40
22.....	1.29	2.64	-----	1.68	1.85	-----	1.83	-----	-----	1.32	1.28	1.40
23.....	1.30	-----	1.73	-----	1.85	-----	1.81	-----	-----	1.32	1.28	1.40
24.....	1.30	2.82	1.80	-----	1.87	-----	1.82	-----	-----	1.32	1.28	1.40
25.....	1.29	3.64	1.83	-----	1.89	-----	1.82	-----	-----	1.32	1.25	1.40
26.....	1.32	3.87	1.96	-----	1.74	-----	1.82	-----	-----	1.30	1.25	1.38
27.....	1.34	3.98	-----	-----	1.77	-----	1.79	-----	-----	1.30	1.25	1.35
28.....	1.36	3.96	-----	-----	1.65	-----	1.78	-----	-----	1.30	1.25	1.35
29.....	1.36	3.96	-----	-----	-----	-----	1.79	-----	-----	1.30	1.45	1.35
30.....	1.38	3.76	-----	-----	-----	-----	1.79	-----	-----	1.30	1.45	1.35
31.....	1.39	-----	-----	-----	-----	-----	-----	-----	-----	1.28	1.43	-----

Daily discharge, in second-feet, of Deschutes River at Laidlaw, Oreg., for 1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1.....	1,440	1,370	1,300	11.....	1,240	1,440	1,140	21.....	1,200	1,140	1,300
2.....	1,140	1,370	1,300	12.....	1,240	1,440	1,170	22.....	1,200	1,140	1,300
3.....	1,140	1,240	1,300	13.....	1,240	1,370	1,170	23.....	1,200	1,140	1,300
4.....	1,140	1,240	1,300	14.....	1,240	1,240	1,170	24.....	1,200	1,140	1,300
5.....	1,440	1,170	1,300	15.....	1,240	1,170	1,200	25.....	1,200	1,100	1,300
6.....	1,440	1,170	1,300	16.....	1,200	1,170	1,200	26.....	1,170	1,100	1,270
7.....	1,440	1,170	1,300	17.....	1,200	1,170	1,240	27.....	1,170	1,100	1,240
8.....	1,270	1,440	1,170	18.....	1,200	1,170	1,240	28.....	1,170	1,100	1,240
9.....	1,240	1,440	1,170	19.....	1,200	1,170	1,300	29.....	1,170	1,370	1,240
10.....	1,240	1,440	1,170	20.....	1,170	1,170	1,440	30.....	1,170	1,370	1,240
								31.....	1,140	1,340	-----

NOTE.—Daily discharge determined from fairly well defined rating curve.

Monthly discharge of Deschutes River at Laidlaw, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
July 8-31.....	1,270	1,140	1,200	57,100	B.
August.....	1,440	1,100	1,260	77,500	B.
September.....	1,440	1,140	1,240	73,800	B.

DESCHUTES RIVER AT CLINE FALLS, OREG.

Location.—In sec. 13, T. 15 S., R. 12 E., 1½ miles southwest of Cline Falls, about 4 miles west of Redmond, and 12 miles below Laidlaw.

Records presented.—February 15 to September 30, 1910.

Drainage area.—Indeterminate.

Gage.—Vertical staff on right bank.

Channel.—Sand, gravel, and bowlders; some moss grows on the bottom; somewhat shifting.

Discharge measurements.—Made from a boat near the gage.

Winter flow.—Not materially affected by ice.

Diversions.—Flow affected by diversions as at Bend and Laidlaw stations. Apparent decrease in discharge between the two stations may be due to seepage of water into the river bed or to inaccuracies in the Laidlaw record.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by Cline Falls Power Co.

Discharge measurements of Deschutes River near Cline Falls, Oreg., for 1910.

Date.	Hydrographer.	Gage height.	Discharge.
Sept. 11	Allen and Davenport	<i>Feet.</i> 0.75	<i>Sec.-ft.</i> 984
19	do	.89	1,190

NOTE.—Measurements made from a boat.

Daily gage height, in feet, of Deschutes River near Cline Falls, Oreg., for 1910.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		1.4	1.4	1.3	1.4	0.9	0.75	0.9
2.....		1.6	1.4	1.35	1.2	.9	.75	.9
3.....		1.6	1.4	1.35	1.15	.9	1.0	.8
4.....		1.65	1.4	1.4	1.15	.9	1.0	.7
5.....		1.7	1.4	1.4	1.1	.9	1.0	.7
6.....		1.75	1.4	1.4	1.1	.9	1.0	.7
7.....		1.8	1.35	1.4	1.05	.9	1.0	.7
8.....		1.75	1.35	1.35	1.0	.9	1.0	.7
9.....		1.7	1.35	1.35	1.0	.9	1.0	.7
10.....		1.6	1.35	1.35	1.0	.85	1.0	.7
11.....		1.5	1.35	1.35	1.0	.85	1.0	.7
12.....		1.5	1.35	1.35	1.0	.85	1.0	.7
13.....		1.5	1.35	1.35	1.0	.8	1.0	.75
14.....		1.55	1.35	1.35	1.0	.8	.9	.75
15.....	1.15	1.55	1.35	1.35	1.0	.8	.85	.8
16.....	1.2	1.55	1.3	1.35	1.0	.8	.8	.8
17.....	1.25	1.55	1.3	1.35	1.0	.8	.75	.8
18.....	1.25	1.6	1.3	1.3	.95	.8	.75	.85
19.....	1.25	1.6	1.35	1.3	.95	.8	.7	.9
20.....	1.25	1.55	1.35	1.3	.95	.8	.7	.85
21.....	1.25	1.55	1.35	1.3	.95	.8	.7	.85
22.....	1.25	1.6	1.35	1.25	1.05	.8	.7	.85
23.....	1.25	1.6	1.35	1.25	1.05	.8	.7	.85
24.....	1.25	1.65	1.35	1.2	.95	.8	.7	.8
25.....	1.25	1.6	1.35	1.15	.95	.8	.7	.8
26.....	1.25	1.55	1.35	1.1	1.0	.8	.7	.8
27.....	1.2	1.5	1.35	1.1	1.0	.8	.7	.8
28.....	1.2	1.5	1.35	1.45	1.0	.8	.7	.8
29.....		1.45	1.3	1.45	1.0	.75	.7	.8
30.....		1.45	1.3	1.45	.9	.75	.85	.8
31.....		1.4		1.45		.75	.80	

Daily discharge, in second-feet, of Deschutes River near Cline Falls, Oreg., for 1910.

Day.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		1,820	1,820	1,670	1,820	1,160	1,020	1,160
2.....		2,140	1,820	1,740	1,530	1,160	1,020	1,160
3.....		2,140	1,820	1,740	1,460	1,160	1,270	1,060
4.....		2,220	1,820	1,820	1,460	1,160	1,270	974
5.....		2,310	1,820	1,820	1,390	1,160	1,270	974
6.....		2,400	1,820	1,820	1,390	1,160	1,270	974
7.....		2,480	1,740	1,820	1,330	1,160	1,270	974
8.....		2,400	1,740	1,740	1,270	1,160	1,270	974
9.....		2,310	1,740	1,740	1,270	1,160	1,270	974
10.....		2,140	1,740	1,740	1,270	1,110	1,270	974
11.....		1,980	1,740	1,740	1,270	1,110	1,270	974
12.....		1,980	1,740	1,740	1,270	1,110	1,270	974
13.....		1,980	1,740	1,740	1,270	1,060	1,270	1,020
14.....		2,060	1,740	1,740	1,270	1,060	1,160	1,020
15.....	1,460	2,060	1,740	1,740	1,270	1,060	1,110	1,060
16.....	1,530	2,060	1,670	1,740	1,270	1,060	1,060	1,060
17.....	1,600	2,060	1,670	1,740	1,270	1,060	1,020	1,060
18.....	1,600	2,140	1,670	1,670	1,220	1,060	1,020	1,110
19.....	1,600	2,140	1,740	1,670	1,220	1,060	974	1,160
20.....	1,600	2,060	1,740	1,670	1,220	1,060	974	1,110
21.....	1,600	2,060	1,740	1,670	1,220	1,060	974	1,110
22.....	1,600	2,140	1,740	1,600	1,330	1,060	974	1,110
23.....	1,600	2,140	1,740	1,600	1,330	1,060	974	1,110
24.....	1,600	2,220	1,740	1,530	1,220	1,060	974	1,060
25.....	1,600	2,140	1,740	1,460	1,220	1,060	974	1,060
26.....	1,600	2,060	1,740	1,390	1,270	1,060	974	1,060
27.....	1,530	1,980	1,740	1,390	1,270	1,060	974	1,060
28.....	1,530	1,980	1,740	1,900	1,270	1,050	974	1,060
29.....		1,900	1,670	1,900	1,270	1,020	974	1,060
30.....		1,900	1,670	1,900	1,160	1,020	1,110	1,060
31.....		1,820		1,900		1,020	1,060	

NOTE.—Daily discharge determined from a rating curve well defined between 950 and 1,400 second-feet.

Monthly discharge of Deschutes River near Cline Falls, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
February 15-28.....	1,600	1,460	1,580	43,900	B.
March.....	2,480	1,820	2,100	129,000	B.
April.....	1,820	1,670	1,740	104,000	B.
May.....	1,900	1,390	1,710	105,000	B.
June.....	1,820	1,160	1,310	78,000	A.
July.....	1,160	1,020	1,090	67,000	A.
August.....	1,270	974	1,110	68,200	A.
September.....	1,160	974	1,050	62,500	A.
The period.....				658,000	

DESCHUTES RIVER NEAR MORO, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 5, T. 1 N., R. 16 E., 10 miles above the mouth of the river, about 8 miles northwest of Moro.

Records presented.—October 19, 1897, to December 31, 1899.

Drainage area.—Indeterminate.

Gage.—Inclined staff.

Discharge measurements.—Made from the "free bridge," 3 miles below the gage.

Diversions.—Practically no diversions during the time records were kept.

Accuracy.—Results good, except for extreme low water in the winter, when they are very uncertain.

Discharge measurements of Deschutes River near Moro, Oreg., in 1897–1899 and 1906.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1897. Sept. 27	C. C. Babb.....	<i>Feet.</i> 2.10	<i>Sec. ft.</i> 5,960	1899. June 10	Sydney Arnold.....	<i>Feet.</i> 3.80	<i>Sec. ft.</i> 10,800
1898. May 6	Sydney Arnold.....	2.60	7,580	1906. Sept. 2 Oct. 17	I. E. Oakes..... Stevens and Oakes.....	1.35 1.40	5,040 5,520

Daily gage height, in feet, of Deschutes River near Moro, Oreg., for 1897–1899.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897–98.												
1.....		2.0	2.2	2.9	2.2	2.7	2.0	2.7	2.3	2.0	1.7	1.6
2.....		2.0	2.2	2.7	2.2	2.8	2.1	2.7	2.3	2.0	1.7	1.6
3.....		2.0	2.1	2.6	2.2	2.8	2.1	2.7	2.2	1.9	1.7	1.6
4.....		2.0	2.1	2.6	2.2	2.8	2.1	2.6	2.2	1.9	1.7	1.7
5.....		2.1	2.1	2.5	2.3	2.9	2.2	2.6	2.2	2.3	1.6	1.7
6.....		2.2	2.3	2.5	2.3	2.9	2.2	2.6	2.1	2.3	1.6	1.7
7.....		2.3	3.3	2.4	2.5	2.9	2.3	2.5	2.1	2.0	1.6	1.6
8.....		2.3	3.4	2.4	2.7	2.8	2.4	2.5	2.2	2.0	1.6	1.6
9.....		2.3	3.4	2.3	2.6	2.8	2.4	2.5	2.2	1.9	1.8	1.6
10.....		2.4	3.2	2.3	2.8	2.8	2.4	2.4	2.3	1.9	1.8	1.6
11.....		2.4	3.2	2.3	2.7	2.8	2.5	2.4	2.3	1.9	1.7	1.6
12.....		2.5	3.4	2.3	2.6	2.7	2.5	2.5	2.3	1.8	1.7	1.6
13.....		2.5	3.2	2.3	2.7	2.6	2.6	2.5	2.4	1.8	1.7	1.5
14.....		2.4	4.1	2.4	3.1	2.5	2.8	2.5	2.4	1.8	1.6	1.5
15.....		2.4	3.4	2.3	3.6	2.4	3.0	2.6	2.5	1.8	1.6	1.5
16.....		2.4	3.2	2.3	3.8	2.4	3.1	2.6	2.5	1.7	1.6	1.6
17.....		2.5	3.1	2.3	3.7	2.3	3.1	2.5	2.6	1.7	1.6	1.6
18.....		2.6	3.0	2.3	3.6	2.3	3.0	2.5	2.6	1.7	1.6	1.6
19.....	2.0	2.8	2.8	2.4	3.3	2.2	3.0	2.4	2.5	1.7	1.7	1.6
20.....	2.1	3.1	2.6	2.3	3.1	2.2	2.9	2.4	2.4	1.7	1.7	1.6
21.....	2.0	2.8	2.6	2.3	3.0	2.2	2.9	2.5	2.3	1.8	1.8	1.6
22.....	2.1	2.5	2.5	2.3	2.8	2.1	2.8	2.5	2.3	1.8	1.8	1.6
23.....	2.1	2.5	2.5	2.2	2.8	2.1	2.9	2.4	2.3	2.0	1.7	1.7
24.....	2.0	2.4	2.4	2.2	2.7	2.1	2.9	2.4	2.2	2.0	1.7	1.7
25.....	2.0	2.3	2.4	2.2	2.7	2.2	2.9	2.4	2.2	1.9	1.7	1.7
26.....	2.0	2.3	2.4	2.1	2.6	2.2	2.9	2.3	2.1	1.9	1.7	1.7
27.....	2.0	2.2	2.8	2.1	2.6	2.1	3.0	2.4	2.1	1.8	1.6	1.7
28.....	2.0	2.2	2.7	2.1	2.6	2.1	2.9	2.5	2.1	1.7	1.6	1.6
29.....	2.0	2.2	3.1	2.1	.....	2.0	2.8	2.5	2.0	1.7	1.6	1.6
30.....	2.0	2.1	3.0	2.1	.....	2.0	2.8	2.4	2.0	1.8	1.6	1.6
31.....	2.1	.....	2.1	2.2	.....	2.0	.....	2.4	.....	1.8	1.6	.....

Daily gage height, in feet, of Deschutes River near Moro, Oreg., for 1897-1899—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1898-99.												
1.....	1.6	1.5	1.7	1.7	2.5	5.5	2.7	3.5	4.0	3.3	2.5	2.3
2.....	1.6	1.5	1.7	1.7	2.4	3.9	2.9	3.4	4.0	3.3	2.5	2.3
3.....	1.6	1.6	1.6	1.6	2.2	3.3	2.9	3.3	4.0	3.4	2.5	2.3
4.....	1.6	1.6	1.7	1.6	1.9	3.0	3.0	3.1	3.9	3.4	2.4	2.4
5.....	1.6	1.7	1.7	1.5	1.7	2.8	3.3	3.1	3.8	3.3	2.4	2.5
6.....	1.6	1.6	1.6	1.4	1.6	2.7	3.6	3.2	3.8	2.3	2.4	2.5
7.....	1.6	1.6	1.6	1.4	1.5	2.7	3.7	3.3	3.7	3.3	2.4	2.4
8.....	1.6	1.6	1.5	1.3	1.4	2.6	3.8	3.7	3.7	3.2	2.4	2.4
9.....	1.6	1.7	1.5	1.3	3.6	2.6	3.9	4.1	3.6	3.2	2.4	2.4
10.....	1.6	1.7	1.4	1.2	5.0	2.5	4.1	4.3	3.7	3.2	2.3	2.3
11.....	1.6	1.7	1.4	1.2	4.0	2.5	4.3	4.3	3.7	3.3	2.3	2.3
12.....	1.6	1.8	1.4	1.3	3.6	2.6	4.6	4.4	3.8	3.3	2.3	2.3
13.....	1.5	1.8	1.3	1.3	3.0	2.5	4.7	4.4	3.9	3.3	2.3	2.3
14.....	1.5	1.9	1.2	1.2	2.8	2.5	4.9	4.2	3.9	3.2	2.2	2.2
15.....	1.5	1.9	1.2	1.3	2.6	2.4	4.6	4.0	3.8	3.2	2.2	2.2
16.....	1.5	2.0	1.1	2.9	2.5	2.4	4.3	3.9	3.8	3.1	2.2	2.2
17.....	1.5	2.1	1.1	2.7	2.5	2.3	4.1	3.8	3.7	3.1	2.2	2.2
18.....	1.5	2.2	1.1	3.4	2.8	2.3	3.9	3.6	3.8	3.1	2.1	2.2
19.....	1.5	2.5	1.2	3.2	2.8	2.5	3.7	3.4	3.9	3.0	2.2	2.1
20.....	1.5	2.2	1.9	3.4	2.9	2.5	3.5	3.4	3.9	3.0	2.1	2.1
21.....	1.5	2.2	1.8	3.7	2.8	2.4	3.8	3.3	3.8	2.9	2.1	2.1
22.....	1.5	2.1	1.8	4.1	2.7	2.4	4.0	3.3	3.7	2.8	2.2	2.1
23.....	1.4	1.9	1.7	3.6	2.7	2.5	4.1	3.4	3.7	2.8	2.4	2.1
24.....	1.4	1.9	1.7	3.1	2.6	2.5	4.1	3.5	3.6	2.7	2.4	2.0
25.....	1.4	1.8	1.6	2.8	2.6	2.8	4.0	3.6	3.6	2.7	2.4	2.0
26.....	1.4	1.8	1.6	2.7	2.5	3.5	3.9	3.7	3.5	2.7	2.5	2.0
27.....	1.4	1.9	1.7	2.6	2.4	3.3	3.8	3.8	3.5	2.6	2.5	2.0
28.....	1.4	1.9	1.8	2.4	2.5	2.9	3.7	3.9	3.5	3.6	2.5	1.9
29.....	1.5	1.8	1.9	2.2	.....	2.9	3.7	3.9	3.4	2.6	2.4	1.9
30.....	1.5	1.8	1.8	2.3	.....	2.8	3.6	3.9	3.4	2.6	2.4	1.9
31.....	1.5	.....	1.8	2.7	.....	2.7	.....	4.0	.....	2.5	2.4	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1899.			1899.				1899.				
1.....	1.9	2.3	3.7	11.....	2.0	2.3	3.2	21.....	2.5	2.2	3.9
2.....	2.0	2.3	3.6	12.....	2.0	2.3	3.3	22.....	2.3	2.2	3.8
3.....	2.0	2.3	3.5	13.....	2.1	2.3	3.6	23.....	2.3	2.2	3.7
4.....	2.0	2.3	3.4	14.....	2.1	2.3	4.1	24.....	2.3	2.2	3.6
5.....	1.9	2.3	3.4	15.....	2.1	2.3	4.1	25.....	2.3	2.2	3.6
6.....	1.9	2.4	3.3	16.....	2.1	2.3	3.9	26.....	2.4	2.3	3.5
7.....	1.9	2.4	3.3	17.....	2.1	2.3	3.7	27.....	2.4	3.7	3.4
8.....	1.9	2.4	3.2	18.....	2.2	2.2	3.6	28.....	2.4	4.1	3.3
9.....	2.0	2.4	3.2	19.....	2.5	2.2	3.6	29.....	2.4	4.1	3.2
10.....	2.0	2.4	3.1	20.....	3.1	2.2	3.7	30.....	2.4	4.1	3.2
								31.....	2.4	.....	3.1

Daily discharge, in second-feet, of Deschutes River near Moro, Oreg., for 1897-1899.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1.		6,030	6,500	8,320	6,500	7,780	6,030	7,780	6,740	6,030	5,350	5,130
2.		6,030	6,500	7,780	6,500	8,050	6,260	7,780	6,740	6,030	5,350	5,130
3.		6,030	6,260	7,510	6,500	8,050	6,260	7,780	6,500	5,800	5,350	5,130
4.		6,030	6,260	7,510	6,500	8,050	6,260	7,510	6,500	5,800	5,350	5,130
5.		6,260	6,260	7,250	6,740	8,320	6,500	7,510	6,500	6,740	5,130	5,350
6.		6,500	6,740	7,250	6,740	8,320	6,500	7,510	6,260	6,740	5,130	5,350
7.		6,740	9,440	6,990	7,250	8,320	6,740	7,250	6,260	6,030	5,130	5,130
8.		6,740	9,720	6,990	7,780	8,050	6,990	7,250	6,500	6,030	5,130	5,130
9.		6,740	9,720	6,740	7,510	8,050	6,990	7,250	6,500	5,800	5,570	5,130
10.		6,990	9,160	6,740	8,050	8,050	6,990	6,990	6,740	5,800	5,570	5,130
11.		6,990	9,160	6,740	7,780	8,050	7,250	6,990	6,740	5,800	5,350	5,130
12.		7,250	9,720	6,740	7,510	7,780	7,250	7,250	6,740	5,570	5,350	5,130
13.		7,250	9,160	6,740	7,780	7,510	7,510	7,250	6,990	5,570	5,350	4,920
14.		6,990	11,700	6,990	8,880	7,250	8,050	7,250	6,990	5,570	5,130	4,920
15.		6,990	9,720	6,740	10,300	6,990	8,600	7,510	7,250	5,570	5,130	4,920
16.		6,990	9,160	6,740	10,800	6,990	8,880	7,510	7,250	5,350	5,130	5,130
17.		7,250	8,880	6,740	10,600	6,740	8,880	7,250	7,510	5,350	5,130	5,130
18.		7,510	8,600	6,740	10,300	6,740	8,600	7,250	7,510	5,350	5,130	5,130
19.	6,030	8,050	8,050	6,990	9,440	6,500	8,600	6,990	7,250	5,350	5,350	5,130
20.	6,260	8,880	7,510	6,740	8,880	6,500	8,320	6,990	6,990	5,350	5,350	5,130
21.	6,030	8,050	7,510	6,740	8,600	6,500	8,320	7,250	6,740	5,570	5,570	5,130
22.	6,260	7,250	7,250	6,740	8,050	6,260	8,050	7,250	6,740	5,570	5,570	5,130
23.	6,260	7,250	7,250	6,500	8,050	6,260	8,220	6,990	6,740	6,030	5,350	5,350
24.	6,030	6,990	6,990	6,500	7,780	6,260	8,320	6,990	6,500	6,030	5,350	5,350
25.	6,030	6,740	6,990	6,500	7,780	6,500	8,320	6,990	6,500	5,800	5,350	5,350
26.	6,030	6,740	6,990	6,260	7,510	6,500	8,320	6,740	6,260	5,800	5,350	5,350
27.	6,030	6,500	8,050	6,260	7,510	6,260	8,600	6,990	6,260	5,570	5,130	5,350
28.	6,030	6,500	7,780	6,260	7,510	6,260	8,320	7,250	6,260	5,350	5,130	5,130
29.	6,030	6,500	8,880	6,260	6,260	6,030	8,050	7,250	6,030	5,350	5,130	5,130
30.	6,030	6,260	8,600	6,260	6,260	6,030	8,050	6,990	6,030	5,570	5,130	5,130
31.	6,260		6,260	6,500		6,030		6,990		5,570	5,130	
1898-99.												
1.	5,130	4,920	5,350	5,350	7,250	16,000	7,780	10,000	11,400	9,440	7,250	6,740
2.	5,130	4,920	5,350	5,350	6,990	11,100	8,320	9,720	11,400	9,440	7,250	6,740
3.	5,130	5,130	5,130	5,130	6,500	9,440	8,320	9,440	11,400	9,720	7,250	6,740
4.	5,130	5,130	5,350	5,130	5,800	8,600	8,600	8,880	11,100	9,720	6,990	6,990
5.	5,130	5,350	5,350	4,920	5,350	8,050	9,440	8,880	10,800	9,440	6,990	7,250
6.	5,130	5,130	5,130	4,710	5,130	7,780	10,300	9,160	10,800	9,440	6,990	7,250
7.	5,130	5,130	5,350	4,710	4,920	7,780	10,600	9,440	10,600	9,440	6,990	6,990
8.	5,130	5,130	4,920	4,500	4,710	7,510	10,800	10,600	10,600	9,160	6,990	6,990
9.	5,130	5,350	4,920	4,500	10,300	7,510	11,100	11,700	10,300	9,160	6,990	6,990
10.	5,130	5,350	4,710	4,300	14,400	7,250	11,700	12,300	10,600	9,160	6,740	6,740
11.	5,130	5,350	4,710	4,300	11,400	7,250	12,300	12,300	10,600	9,440	6,740	6,740
12.	5,130	5,570	4,710	4,500	10,300	7,510	13,200	12,600	10,800	9,440	6,740	6,740
13.	4,920	5,570	4,500	4,500	8,600	7,250	13,500	12,600	11,100	9,440	6,740	6,740
14.	4,920	5,800	4,300	4,300	8,050	7,250	14,100	12,000	11,100	9,160	6,500	6,500
15.	4,920	5,800	4,300	4,500	7,510	6,990	13,200	11,400	10,800	9,160	6,500	6,500
16.	4,920	6,030	4,100	8,320	7,250	6,990	12,300	11,100	10,800	8,880	6,500	6,500
17.	4,920	6,260	4,100	7,780	7,250	6,740	11,700	10,800	10,600	8,880	6,500	6,500
18.	4,920	6,500	4,100	9,720	8,050	6,740	11,100	10,300	10,800	8,880	6,260	6,500
19.	4,920	7,250	4,300	9,160	8,050	7,250	10,600	9,720	11,100	8,600	6,500	6,260
20.	4,920	6,500	5,800	9,720	8,320	7,250	10,000	9,720	11,100	8,600	6,260	6,260
21.	4,920	6,500	5,570	10,600	8,050	6,990	10,800	9,440	10,800	8,320	6,260	6,260
22.	4,920	6,260	5,570	11,700	7,780	6,990	11,400	9,440	10,600	8,050	6,500	6,260
23.	4,710	5,800	5,350	10,300	7,780	7,250	11,700	9,720	10,600	8,050	6,990	6,260
24.	4,710	5,800	5,350	8,880	7,510	7,250	11,700	10,000	10,300	7,780	6,990	6,030
25.	4,710	5,570	5,130	8,050	7,510	8,050	11,400	10,300	10,300	7,780	6,990	6,030
26.	4,710	5,570	5,130	7,780	7,250	10,000	11,100	10,600	10,000	7,780	7,250	6,030
27.	4,710	5,800	5,350	7,510	6,990	9,440	10,800	10,800	10,000	7,510	7,250	6,030
28.	4,710	5,800	5,570	6,990	7,250	8,320	10,600	11,100	10,000	7,510	7,250	5,800
29.	4,920	5,570	5,800	6,500		8,320	10,600	11,100	9,720	7,510	6,990	5,800
30.	4,920	5,570	5,570	6,740		8,050	10,300	11,100	9,720	7,510	6,990	5,800
31.	4,920		5,570	7,780		7,780		11,400		7,250	6,990	

Daily discharge, in second-feet, of Deschutes River near Moro, Oreg., for 1897-1899—Contd.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1899.				1899.				1899.			
1.....	5,800	6,740	10,600	11.....	6,030	6,740	9,160	21.....	7,250	6,500	11,100
2.....	6,030	6,740	10,300	12.....	6,030	6,740	9,440	22.....	6,740	6,500	10,800
3.....	6,030	6,740	10,000	13.....	6,260	6,740	10,300	23.....	6,740	6,500	10,600
4.....	6,030	6,740	9,720	14.....	6,260	6,740	11,700	24.....	6,740	6,500	10,300
5.....	5,800	6,740	9,720	15.....	6,260	6,740	11,700	25.....	6,740	6,500	10,300
6.....	5,800	6,990	9,440	16.....	6,260	6,740	11,100	26.....	6,990	6,740	10,000
7.....	5,800	6,990	9,440	17.....	6,260	6,740	10,600	27.....	6,990	10,600	9,720
8.....	5,800	6,990	9,160	18.....	6,500	6,500	10,300	28.....	6,990	11,700	9,440
9.....	6,030	6,990	9,160	19.....	7,250	6,500	10,300	29.....	6,990	11,700	9,160
10.....	6,030	6,990	8,880	20.....	8,880	6,500	10,600	30.....	6,990	11,700	9,160
								31.....	6,990	.....	8,880

NOTE.—Daily discharge determined from rating curve fairly well defined between 5,000 and 12,000 second-feet.

Monthly discharge of Deschutes River near Moro, Oreg., for 1897-1899.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1897-98.					
October 19-31.....	6,260	6,030	6,100	157,000	B.
November.....	8,880	6,030	6,900	411,000	B.
December.....	11,700	6,260	8,090	497,000	B.
January.....	8,320	6,260	6,830	420,000	B.
February.....	10,800	6,500	8,040	447,000	B.
March.....	8,320	6,030	7,130	438,000	B.
April.....	8,880	6,030	7,670	456,000	B.
May.....	7,780	6,740	7,240	445,000	B.
June.....	7,510	6,030	6,680	397,000	B.
July.....	6,740	5,350	5,740	353,000	B.
August.....	5,570	5,130	5,280	325,000	B.
September.....	5,350	4,920	5,170	308,000	B.
The period.....				4,650,000	
1898-99.					
October.....	5,130	4,710	4,960	305,000	C.
November.....	7,250	4,920	5,680	338,000	B.
December.....	5,800	4,100	5,040	310,000	C.
January.....	11,700	4,300	6,390	393,000	C.
February.....	14,400	4,710	7,720	429,000	B.
March.....	16,000	6,740	8,090	497,000	B.
April.....	14,100	7,780	11,000	655,000	B.
May.....	12,600	8,880	10,600	652,000	B.
June.....	11,400	9,720	10,700	637,000	B.
July.....	9,720	7,250	8,700	535,000	B.
August.....	7,250	6,260	6,840	421,000	B.
September.....	7,250	5,800	6,500	387,000	B.
The year.....	16,000	4,100	7,670	5,560,000	
1899.					
October.....	8,880	5,800	6,460	397,000	B.
November.....	11,700	6,500	7,340	437,000	B.
December.....	11,700	8,880	10,000	615,000	B.

DESCHUTES RIVER AT MOODY, NEAR BIGGS, OREG.

Location.—In the SE. ¼ sec. 26, T. 2 N., R. 15 E., opposite Moody railroad station, 1¼ miles above the bridge of the Oregon-Washington Railroad & Navigation Co., about 5 miles southwest of Biggs, and 1½ miles above mouth of river.

Records presented.—July 7, 1906, to September 30, 1910; records for 1908 and 1910 somewhat fragmentary.

Drainage area.—Indeterminate.

Gage.—Staff in two sections—the lower inclined, the upper vertical.

Discharge measurements.—Made from a cable about 450 feet above the gage.

Diversions.—Summer discharge at this station has been progressively reduced since about 1904 or 1905 by diversions from the upper river. Some of this water returns, but the net reduction during midsummer is now probably 10 or 15 per cent.

Accuracy.—Rating curve excellent, records good except for periods during which the gage-height record is fragmentary, and for which discharge has been estimated from studies of the records.

Cooperation.—Gage heights furnished by M. A. Moody, The Dalles, Oreg.

Discharge measurements of Deschutes River at Moody, near Biggs, Oreg., in 1906-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 7	L. R. Allen	2.63	6,010	June 18	H. D. McGlashan	2.80	6,850
Aug. 30	do	2.34	5,140	Oct. 10	L. R. Allen	2.38	5,360
Sept. 29	I. E. Oakes	2.30	5,000				
Oct. 18	Stevens and Oakes	2.35	5,320	1910.			
Dec. 17	H. D. McGlashan	2.64	5,710	Mar. 10	L. R. Allen	4.40	13,600
				July 27	Ebert and Davenport	2.36	5,170
1907.							
June 6	I. E. Oakes	3.00	7,500				

Daily gage height, in feet, of Deschutes River at Moody, near Biggs, Oreg., for 1906-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1906.				1906.				1906.			
1		2.4	2.3	11		2.4	2.3	21		2.4	2.3
2		2.4	2.3	12		2.4	2.3	22		2.4	2.3
3		2.4	2.3	13		2.4	2.3	23		2.4	2.3
4		2.4	2.3	14		2.4	2.3	24		2.4	2.3
5		2.4	2.3	15		2.4	2.3	25		2.4	2.3
6		2.4	2.3	16		2.4	2.3	26		2.4	2.3
7		2.4	2.3	17		2.4	2.3	27		2.4	2.3
8		2.4	2.3	18		2.4	2.3	28		2.4	2.3
9		2.4	2.3	19		2.4	2.3	29		2.4	2.3
10		2.4	2.3	20		2.4	2.3	30		2.4	2.3
								31		2.4	2.4

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1	2.30	2.35	2.56	2.98	4.00				3.15			2.50
2	2.30	2.35		2.95	2.90	3.65		3.70	3.13	2.80		
3	2.30	2.35	2.55	2.82		3.60	3.40					2.50
4	2.30	2.35		3.98	2.92			3.50	3.12	2.80		
5	2.30	2.35	2.55	3.40	3.45	3.58	3.65	3.42				2.50
6	2.30	2.35	2.55	3.00	7.50		3.70		3.10	2.80		
7	2.30	2.45		2.98	6.80	3.57	3.95	3.40		2.80		2.50
8	2.30	3.25	2.66	2.95	6.00				3.09		2.50	2.50
9	2.30			2.93	5.30	3.55	4.50	3.40	3.06	2.78		
10	2.30	2.90	2.62	2.90		3.50					2.50	2.50
11	2.30	3.00	2.60	2.86	4.82	3.47	4.50	3.40	3.02	2.77	2.50	
12	2.30			2.85				3.40				2.50
13	2.30	3.80	2.58	2.75	4.54	3.32	4.50		2.98	2.76	2.50	
14	2.30	3.65		2.75				3.38				2.50
15	2.30	4.10	2.55	2.65	4.20	3.28	4.40		2.93	2.73	2.50	2.50
16	2.30	3.90		2.68	4.05	3.25	4.32	3.38	2.90			
17		3.60	2.63	2.60	4.00	3.20			2.90	2.70	2.50	
18	2.35	3.46		2.62			4.15	3.40				
19	2.35		2.65	2.65	4.00	3.23		3.40	2.88	2.63	2.50	
20	2.35	3.10					4.05			2.60		
21	2.35	2.85	3.50	2.64	4.25	4.50	4.00	3.35		2.58	2.50	
22	2.35	2.75	3.25		4.75				2.85			
23	2.35			2.63	4.32	4.10	4.00	3.33	2.85	2.55	2.50	
24	2.35	2.70	3.18	2.62	4.33	3.90	4.00				2.53	
25	2.35		3.10		4.30		3.98	3.30	2.82	2.52	2.55	
26	2.35	2.65		2.60		3.40	3.97	3.30				
27	2.56		3.08	2.63	3.95	3.12	3.95		2.82	2.50	2.50	
28	2.40	2.60			3.82		3.90	3.25				
29	2.39		3.03	2.63		3.05					2.50	2.50
30	2.36	2.58	3.00			3.03	3.82	3.20	2.80			2.50
31	2.35		2.98	2.63		3.04					2.50	

Daily gage height, in feet, of Deschutes River at Moody, near Biggs, Oreg., for 1906-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1			2.65		2.60							
2	2.50	2.50		3.15	2.60		3.15	3.23	2.82			
3		2.50	2.64					3.21				
4	2.50			3.10	2.60		3.08		2.81			
5	2.50	2.52	2.63	3.10			3.06	3.15				
6	2.50				2.65				2.80			
7		2.52	2.63	3.08			3.00	3.10				
8	2.50		2.63		2.65							
9		2.53	2.65	3.05	2.65		3.05	3.05				
10	2.50	2.53						3.00				
11			2.65	3.02	2.65		3.08					
12	2.50	2.53		3.02			3.10	2.98				
13	2.50		2.68		2.65							
14		2.53	2.70	3.03			3.20	2.97				
15	2.50		2.70		2.65	2.95						
16		2.55		3.03	2.65	4.80	3.30	2.95				
17	2.50	2.55	2.70		2.63			2.92			2.40	
18				3.03		4.65	3.50					
19	2.50	2.55	2.68	3.02	2.63		3.65	2.90			2.40	
20	2.50		2.65			4.10						
21		2.55	2.65	3.00	2.63	3.80	3.58	2.89			2.40	
22	2.50		4.10		2.63	3.70					2.40	
23		2.55		3.00	2.62		3.50	2.87				
24	2.50	2.55	4.40			3.65		2.86				
25		2.70	4.50	3.00	2.60		3.42					
26	2.50	3.10		2.95		3.45	3.40	2.86				
27	2.50		6.00		2.60							
28		2.85	5.50	2.85		3.38	3.35					
29	2.50		4.00	2.80	2.60	3.30		2.85				
30		2.65	3.30				3.28	2.85				2.37
31	2.50		2.90	2.65		3.20		2.83				
1908-9.												
1								3.15	2.80	2.55	2.45	
2								3.12				2.30
3			2.59	2.50	2.70	3.10	3.30		2.95	2.53	2.43	2.38
4			2.58		2.65	3.10	3.50	3.08	3.20			
5			2.58				3.43		3.10		2.40	2.40
6			2.58		2.60	3.10		3.05	3.00			
7					2.63	3.10	3.30				2.40	2.40
8			2.58					3.00	2.95	2.42	2.40	
9					2.60	3.05	3.20					2.40
10			2.55					3.00	2.90	2.40	2.39	
11					2.58	3.03	3.10			2.40		2.40
12			2.53					3.00	2.88		2.38	2.40
13			2.50		2.55	3.00	3.15		2.87	2.40		
14					2.55			3.00			2.38	2.40
15		2.58	2.48			2.95	3.25	2.98	2.85	2.42	2.37	
16		2.58			2.54		3.30	2.93				2.40
17		2.60	2.47		2.90	2.90	3.40		2.83	2.45	2.37	
18					4.00		3.35	2.85		2.46		2.40
19		2.60	2.45	4.20		2.88			2.80		2.3	2.40
20			2.45	4.50	3.60	2.87	3.25	2.80	2.78	2.48		
21		2.60		4.40	3.40	2.86					2.35	2.40
22		2.60	2.48				3.20	2.7	2.75	2.50	2.35	
23				3.70	3.20	2.84		2.7				2.40
24		2.60	2.48				3.15		2.65	2.52	2.30	
25				3.20	3.15	2.80	3.10	2.7		2.57		2.40
26		2.60	2.48						2.63		2.30	2.40
27			2.48	3.00	3.10	2.80	3.15	2.72	2.60	2.50		
28		2.60			3.10	3.01					2.30	2.45
29			2.50	2.90		3.50	3.25	2.73	2.58	2.48	2.30	
30		2.60		2.80		3.70	3.20	2.73				2.45
31			2.50	2.75		3.40				2.47	2.30	

Daily gage height, in feet, of Deschutes River at Moody, near Biggs, Oreg., for 1906-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1		2.47				6.65	3.45					
2	2.45		3.47	3.2		6.85	3.4					
3		2.68				6.7						
4	2.45		3.30	3.2		6.3						
5		2.68	3.25			5.8						
6	2.45	2.68		3.2								
7		2.68	3.20									
8				3.2								
9	2.45	2.70	3.20	3.2								
10	2.45					4.4						
11		2.70	3.20	3.35								
12	2.45		3.40									
13		2.70	4.20	3.45								
14	2.45	2.70										
15			3.60	3.6								
16	2.45	2.71										
17	2.45		3.20	3.5								
18		2.73	3.20									
19	2.47		3.20	3.5								
20		2.90			2.9							
21	2.47	3.00	3.20	3.45								
22		3.10		3.45	2.9							
23	2.47	6.10	3.20	4.0								
24	2.47	6.70			3.1							
25		5.90	3.20	5.3	4.2							
26	2.47		3.20	4.2	4.65							
27		4.60			4.2					2.36		
28	2.47	4.20	3.20	3.0	4.15	3.6						
29				3.0								
30	2.47	4.00	3.20			3.5						
31			3.20									

NOTE.—Ice reported along shores Jan. 4-18, 1909. S. W. Arnold, an engineer who read the gage occasionally, reported gage height to have been 2.30 feet during August and September, 1910.

Daily discharge, in second-feet, of Deschutes River at Moody, near Biggs, Oreg., for
1906-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1906.				1906.				1906.			
1	5,360	5,080		11	5,360	5,080		21		5,360	5,080
2	5,360	5,080		12	5,360	5,080		22	5,360	5,360	5,080
3	5,360	5,080		13	5,360	5,080		23	5,360	5,360	5,080
4	5,360	5,080		14	5,360	5,080		24	5,360	5,360	5,080
5	5,360	5,080		15	5,360	5,080		25	5,360	5,360	5,080
6	5,360	5,080		16	5,360	5,080		26	5,360	5,360	5,080
7	5,360	5,080		17	5,360	5,080		27	5,360	5,360	5,080
8	5,360	5,080		18	5,360	5,080		28	5,360	5,360	5,080
9	5,360	5,080		19	5,360	5,080		29	5,360	5,360	5,080
10	5,360	5,080		20	5,360	5,080		30	5,360	5,360	5,080
								31	5,360	5,360	

Daily discharge, in second-feet, of Deschutes River at Moody, near Biggs, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	5,080	5,220	5,850	7,340	11,700	10,500	8,050	10,600	8,000	6,680	5,660	5,660
2.....	5,080	5,220	5,840	7,230	7,047	10,100	8,520	10,300	7,920	6,680	5,660	5,660
3.....	5,080	5,220	5,820	6,750	7,080	9,860	9,000	9,860	7,900	6,680	5,660	5,660
4.....	5,080	5,220	5,820	11,600	7,120	9,820	9,600	9,420	7,880	6,680	5,660	5,660
5.....	5,080	5,220	5,820	9,000	9,210	9,770	10,100	9,080	7,840	6,680	5,660	5,660
6.....	5,080	5,220	5,82	7,420	30,600	9,770	10,300	9,040	7,800	6,680	5,660	5,660
7.....	5,080	5,510	6,007	7,340	26,600	9,730	11,500	9,000	7,780	6,680	5,660	5,660
8.....	5,080	8,400	6,180	7,230	22,200	9,680	12,800	9,000	7,760	6,640	5,660	5,660
9.....	5,080	7,720	6,120	7,150	18,400	9,640	14,200	9,000	7,650	6,610	5,660	5,660
10.....	5,080	7,040	6,050	7,040	17,100	9,420	14,200	9,000	7,580	6,590	5,660	5,660
11.....	5,080	7,420	5,980	6,900	15,900	9,290	14,200	9,000	7,500	6,570	5,660	5,660
12.....	5,080	9,110	5,950	6,860	15,100	8,900	14,200	9,000	7,420	6,560	5,660	5,660
13.....	5,080	10,800	5,920	6,500	14,400	8,680	14,200	8,960	7,340	6,540	5,660	5,660
14.....	5,080	10,100	5,870	6,500	13,600	8,600	14,000	8,920	7,260	6,480	5,660	5,660
15.....	5,080	12,200	5,820	6,150	12,700	8,520	13,700	8,920	7,150	6,430	5,660	5,660
16.....	5,080	11,200	5,950	6,250	11,900	8,400	13,300	8,920	7,040	6,370	5,660	5,660
17.....	5,150	9,860	6,080	5,950	11,700	8,200	12,800	8,960	7,040	6,320	5,660	5,660
18.....	5,220	9,250	6,020	6,050	11,700	8,260	12,400	9,000	7,000	6,200	5,660	5,660
19.....	5,220	8,520	6,150	6,150	11,700	8,320	12,100	9,000	6,970	6,080	5,660	5,660
20.....	5,220	7,800	7,780	6,120	12,300	11,300	11,900	8,900	6,940	5,980	5,660	5,660
21.....	5,220	6,860	9,420	6,120	12,900	14,200	11,700	8,800	6,900	5,920	5,660	5,660
22.....	5,220	6,500	8,400	6,100	13,100	15,500	11,700	8,760	6,860	5,870	5,660	5,660
23.....	5,220	6,410	8,260	6,080	13,300	12,200	11,700	8,720	6,860	5,820	5,660	5,660
24.....	5,220	6,320	8,120	6,050	13,300	11,200	11,700	8,660	6,800	5,770	5,760	5,660
25.....	5,220	6,240	7,800	6,020	13,200	10,100	11,600	8,600	6,750	5,720	5,820	5,660
26.....	5,220	6,150	7,760	5,980	12,300	9,000	11,600	8,600	6,750	5,690	5,740	5,660
27.....	5,850	6,060	7,720	6,080	11,500	7,880	11,500	8,500	6,750	5,660	5,660	5,660
28.....	5,360	5,980	7,620	6,080	10,900	7,740	11,200	8,400	6,720	5,660	5,660	5,660
29.....	5,330	5,950	7,530	6,080	-----	7,610	11,000	8,300	6,680	5,660	5,660	5,660
30.....	5,250	5,920	7,420	6,080	-----	7,530	10,900	8,200	6,680	5,660	5,660	5,660
31.....	5,220	-----	7,340	6,080	-----	7,570	-----	8,100	-----	5,660	5,660	-----
1907-8.												
1.....	5,660	5,660	6,150	7,520	5,980	6,000	8,100	8,420	6,770	-----	-----	-----
2.....	5,660	5,660	6,140	8,000	5,980	6,000	8,000	8,320	6,750	-----	-----	-----
3.....	5,660	5,660	6,120	7,900	5,980	6,000	7,860	8,240	6,740	-----	-----	-----
4.....	5,660	5,690	6,100	7,800	5,980	6,000	7,720	8,120	6,720	-----	-----	-----
5.....	5,660	5,720	6,080	7,800	6,060	6,000	7,650	8,000	6,700	-----	-----	-----
6.....	5,660	5,720	6,080	7,760	6,150	6,000	7,540	7,900	6,680	-----	-----	-----
7.....	5,660	5,720	6,080	7,720	6,150	6,000	7,420	7,800	-----	-----	-----	-----
8.....	5,660	5,740	6,080	7,660	6,150	6,000	7,520	7,700	-----	-----	-----	-----
9.....	5,660	5,760	6,150	7,610	6,150	6,000	7,610	7,610	-----	-----	-----	-----
10.....	5,660	5,760	6,150	7,560	6,150	6,000	7,660	7,420	-----	-----	-----	-----
11.....	5,660	5,760	6,150	7,500	6,150	6,000	7,720	7,380	-----	-----	-----	-----
12.....	5,660	5,760	6,200	7,500	6,150	6,000	7,800	7,340	-----	-----	-----	-----
13.....	5,660	5,760	6,250	7,520	6,150	6,000	8,000	7,330	-----	-----	-----	-----
14.....	5,660	5,760	6,320	7,530	6,150	6,000	8,200	7,310	-----	-----	-----	-----
15.....	5,660	5,790	6,320	7,530	6,150	7,230	8,400	7,280	-----	-----	-----	-----
16.....	5,660	5,820	6,320	7,530	6,150	15,800	8,600	7,230	-----	-----	-----	-----
17.....	5,660	5,820	6,320	7,530	6,080	15,400	9,010	7,120	-----	-----	5,360	-----
18.....	5,660	5,820	6,280	7,530	6,080	15,000	9,420	7,080	-----	-----	5,360	-----
19.....	5,660	5,820	6,250	7,500	6,080	13,600	10,100	7,040	-----	-----	5,360	-----
20.....	5,660	5,820	6,150	7,460	6,080	12,200	9,940	7,020	-----	-----	5,360	-----
21.....	5,660	5,820	6,150	7,420	6,080	10,800	9,770	7,000	-----	-----	5,360	-----
22.....	5,660	5,820	12,200	7,420	6,080	10,300	9,600	6,960	-----	-----	5,360	-----
23.....	5,660	5,820	13,000	7,420	6,050	10,200	9,420	6,930	-----	-----	-----	-----
24.....	5,660	5,820	13,700	7,420	6,020	10,100	9,250	6,900	-----	-----	-----	-----
25.....	5,660	6,320	14,200	7,420	5,980	9,660	9,080	6,900	-----	-----	-----	-----
26.....	5,660	7,800	18,200	7,230	5,980	9,210	9,000	6,900	-----	-----	-----	-----
27.....	5,660	7,320	22,200	7,040	5,980	9,060	8,900	6,890	-----	-----	-----	-----
28.....	5,660	6,860	19,500	6,860	5,980	8,920	8,800	6,870	-----	-----	-----	-----
29.....	5,660	6,500	11,700	6,680	5,980	8,600	8,660	6,860	-----	-----	-----	-----
30.....	5,660	6,150	8,600	6,420	-----	8,400	8,520	6,860	-----	-----	-----	5,280
31.....	5,660	-----	7,040	6,150	-----	8,200	-----	6,790	-----	-----	-----	-----

Daily discharge, in second-feet, of Deschutes River at Moody, near Biggs, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		5,970	5,960	5,660	6,410	7,800	8,800	8,000	6,680	5,820	5,510	5,080
2.....		5,970	5,950	5,660	6,320	7,800	8,600	7,880	6,960	5,790	5,480	5,080
3.....		5,970	5,940	5,660	6,240	7,800	8,800	7,800	7,230	5,760	5,450	5,300
4.....		5,970	5,920	5,660	6,150	7,800	9,420	7,720	8,200	5,690	5,400	5,330
5.....		5,970	5,920	5,660	6,060	7,800	9,130	7,660	7,800	5,620	5,360	5,360
6.....		5,970	5,920	5,660	5,980	7,800	8,860	7,610	7,420	5,560	5,360	5,360
7.....		5,970	5,920	5,660	6,080	7,800	8,600	7,520	7,320	5,490	5,360	5,360
8.....		5,970	5,920	5,660	6,030	7,700	8,400	7,420	7,230	5,420	5,360	5,360
9.....		5,970	5,870	5,660	5,980	7,610	8,200	7,420	7,140	5,390	5,340	5,360
10.....		5,970	5,820	5,660	5,950	7,570	8,000	7,420	7,040	5,360	5,330	5,360
11.....		5,970	5,790	5,660	5,920	7,530	7,800	7,420	7,000	5,360	5,320	5,360
12.....		5,970	5,760	5,660	5,870	7,480	7,900	7,420	6,970	5,360	5,300	5,360
13.....		5,970	5,660	5,660	5,820	7,420	8,000	7,420	6,930	5,360	5,300	5,360
14.....		5,970	5,630	5,660	5,820	7,320	8,200	7,420	6,900	5,390	5,300	5,360
15.....		5,920	5,600	5,660	5,800	7,230	8,400	7,340	6,860	5,420	5,280	5,360
16.....		5,920	5,580	5,660	5,790	7,140	8,600	7,150	6,820	5,460	5,280	5,360
17.....		5,980	5,570	8,000	7,040	7,040	9,000	7,000	6,790	5,510	5,280	5,360
18.....		5,980	5,540	10,000	11,700	7,000	8,800	6,860	6,740	5,540	5,260	5,360
19.....		5,980	5,510	12,700	10,800	6,970	8,600	6,770	6,680	5,570	5,250	5,360
20.....		5,980	5,510	14,200	9,860	6,930	8,400	6,680	6,610	5,600	5,240	5,360
21.....		5,980	5,560	13,700	9,000	6,900	8,300	6,500	6,560	5,630	5,220	5,360
22.....		5,980	5,600	12,000	8,600	6,860	8,200	6,320	6,500	5,660	5,220	5,360
23.....		5,980	5,600	10,300	8,200	6,820	8,100	6,320	6,320	5,690	5,150	5,360
24.....		5,980	5,600	9,250	8,100	6,750	8,000	6,320	6,150	5,720	5,080	5,360
25.....		5,980	5,600	8,200	8,000	6,680	7,800	6,320	6,120	5,800	5,080	5,360
26.....		5,980	5,600	7,810	7,900	6,680	7,900	6,360	6,080	5,770	5,080	5,360
27.....		5,980	5,600	7,420	7,800	6,680	8,000	6,390	5,980	5,660	5,080	5,440
28.....		5,980	5,630	7,230	7,800	7,460	8,200	6,410	5,950	5,630	5,080	5,510
29.....		5,980	5,660	7,040	-----	9,420	8,400	6,430	5,920	5,600	5,080	5,510
30.....		5,980	5,660	6,680	-----	10,300	8,200	6,430	5,870	5,580	5,080	5,510
31.....		5,980	5,660	6,500	-----	9,000	-----	6,560	-----	5,570	5,080	-----
1909-10.												
1.....	5,510	5,570	10,500	8,200	7,400	25,700	9,210	-----	-----	-----	-----	-----
2.....	5,510	5,910	9,290	8,200	7,400	26,900	9,000	-----	-----	-----	-----	-----
3.....	5,510	6,250	8,940	8,200	7,400	26,000	-----	-----	-----	-----	-----	-----
4.....	5,510	6,250	8,600	8,200	7,400	23,800	-----	-----	-----	-----	-----	-----
5.....	5,510	6,250	8,400	8,200	7,400	21,100	-----	-----	-----	-----	-----	-----
6.....	5,510	6,250	8,300	8,200	7,300	19,600	-----	-----	-----	-----	-----	-----
7.....	5,510	6,250	8,200	8,200	7,300	18,100	-----	-----	-----	-----	-----	-----
8.....	5,510	6,280	8,200	8,200	7,300	16,600	-----	-----	-----	-----	-----	-----
9.....	5,510	6,320	8,200	8,200	7,300	15,100	-----	-----	-----	-----	-----	-----
10.....	5,510	6,320	8,200	8,500	7,300	13,600	-----	-----	-----	-----	-----	-----
11.....	5,510	6,320	8,200	8,800	7,200	13,400	-----	-----	-----	-----	-----	-----
12.....	5,510	6,320	9,000	9,000	7,200	13,200	-----	-----	-----	-----	-----	-----
13.....	5,510	6,320	12,700	9,210	7,200	13,000	-----	-----	-----	-----	-----	-----
14.....	5,510	6,320	11,300	9,740	7,200	12,800	-----	-----	-----	-----	-----	-----
15.....	5,510	6,340	9,860	9,860	7,200	12,600	-----	-----	-----	-----	-----	-----
16.....	5,510	6,360	9,030	9,640	7,200	12,400	-----	-----	-----	-----	-----	-----
17.....	5,510	6,400	8,200	9,420	7,100	12,200	-----	-----	-----	-----	-----	-----
18.....	5,540	6,430	8,200	9,420	7,100	12,000	-----	-----	-----	-----	-----	-----
19.....	5,570	6,720	8,200	9,420	7,100	11,800	-----	-----	-----	-----	-----	-----
20.....	5,570	7,040	8,200	9,320	7,040	11,600	-----	-----	-----	-----	-----	-----
21.....	5,570	7,420	8,200	9,210	7,040	11,400	-----	-----	-----	-----	-----	-----
22.....	5,570	7,800	8,200	9,210	7,040	11,200	-----	-----	-----	-----	-----	-----
23.....	5,570	22,700	8,200	11,700	7,420	11,000	-----	-----	-----	-----	-----	-----
24.....	5,570	26,000	8,200	15,000	7,800	10,800	-----	-----	-----	-----	-----	-----
25.....	5,570	21,700	8,200	18,400	12,700	10,500	-----	-----	-----	-----	-----	-----
26.....	5,570	18,200	8,200	12,700	15,000	10,200	-----	-----	-----	-----	-----	-----
27.....	5,570	14,700	8,200	10,000	12,700	10,000	-----	-----	-----	-----	-----	-----
28.....	5,570	12,700	8,200	7,420	12,400	9,860	-----	-----	-----	-----	-----	-----
29.....	5,570	12,200	8,200	7,420	-----	9,630	-----	-----	-----	-----	-----	-----
30.....	5,570	11,700	8,200	7,400	-----	9,420	-----	-----	-----	-----	-----	-----
31.....	5,570	-----	8,200	7,400	-----	9,320	-----	-----	-----	-----	-----	-----

NOTE.—Discharge determined from rating curve well defined between 5,000 and 15,000 second-feet. Discharge for days for which gage heights are missing generally interpolated.

Monthly discharge of Deschutes River at Moody, near Biggs, Oreg., for 1906-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
July 22-31.....	5,360	5,360	5,360	106,000	A.
August.....	5,360	5,360	5,360	330,000	A.
September.....	5,080	5,080	5,080	302,000	A.
1906-7.					
October.....	5,850	5,080	5,180	319,000	A.
November.....	12,200	5,220	7,290	434,000	A.
December.....	9,420	5,820	6,720	413,000	A.
January.....	11,600	5,980	6,720	413,000	A.
February.....	30,600	7,040	13,900	772,000	A.
March.....	15,500	7,530	9,590	590,000	A.
April.....	14,200	8,050	11,900	708,000	A.
May.....	10,600	8,100	8,950	550,000	A.
June.....	8,000	6,680	7,250	431,000	A.
July.....	6,680	5,660	6,230	383,000	A.
August.....	5,820	5,660	5,670	349,000	A.
September.....	5,660	5,660	5,660	337,000	A.
The year.....	30,600	5,080	7,870	5,700,000	
1907-8.					
October.....	5,660	5,660	5,660	348,000	A.
November.....	7,500	5,660	5,980	356,000	A.
December.....	22,200	6,050	8,720	536,000	A.
January.....	8,000	6,150	7,420	456,000	A.
February.....	6,150	5,980	6,110	351,000	A.
March.....	15,800	6,000	8,600	529,000	B.
April.....	10,100	7,420	8,510	506,000	A.
May.....	8,420	6,790	7,340	451,000	A.
June.....			6,500	387,000	B.
July.....			6,000	369,000	B.
August.....			5,400	332,000	B.
September.....			5,300	315,000	B.
The year.....	22,200		6,800	4,940,000	
1908-9.					
October.....			5,300	326,000	B.
November.....			5,970	355,000	B.
December.....	5,960	5,510	5,710	351,000	A.
January.....	14,200	5,660	7,470	459,000	B.
February.....	11,700	5,790	7,180	399,000	A.
March.....	10,300	6,680	7,520	462,000	A.
April.....	9,420	7,800	8,390	499,000	A.
May.....	8,000	6,320	7,040	433,000	A.
June.....	8,200	5,870	6,760	402,000	A.
July.....	5,880	5,360	5,580	343,000	A.
August.....	5,510	5,080	5,260	323,000	A.
September.....	5,510	5,080	5,360	319,000	A.
The year.....	14,200		6,450	4,670,000	
1909-10.					
October.....	5,570	5,510	5,540	341,000	A.
November.....	26,000	5,570	9,380	558,000	A.
December.....	12,700	8,200	8,710	536,000	A.
January.....	18,400	7,400	9,420	579,000	B.
February.....	15,000	7,040	8,110	450,000	B.
March.....	26,900	9,320	14,300	879,000	B.
April.....			8,740	520,000	B.
May.....			7,960	489,000	B.
June.....			6,320	376,000	B.
July.....			5,400	332,000	B.
August.....			5,180	319,000	B.
September.....			5,230	311,000	B.
The year.....	26,900		7,860	5,690,000	

NOTE.—Discharge for Mar. 1-14 and June to Oct., 1908, estimated by comparison with discharge at West's ranch.

Mean for Nov. 6-30, 1908, taken as mean for the month.

Monthly means for April to September, 1910, were obtained from comparisons with the discharge of upper Deschutes River and its tributaries. The results obtained in different ways are so consistent that the values used can not be much in error.

EAST FORK AT CRESCENT,¹ OREG.

Location.—In the NE. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 30, T. 24 S., R. 9 E., at the wagon bridge at Crescent, 5 miles above mouth of East Fork.

Records presented.—December 26, 1904, to March 31, 1908; a few later discharge measurements.

Drainage area.—179 square miles.

Gage.—Vertical staff spiked to a pile supporting the bridge on upstream side.

Channel.—Coarse gravel; shifts during floods.

Discharge measurements.—Made by wading or from the wagon bridge to which the gage is nailed.

Winter flow.—Materially affected by ice.

Accuracy.—Results good except during periods of ice and extreme floods.

Discharge measurements of East Fork at Crescent, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 31	I. Landes.....	2.50	63	Apr. 8	I. E. Oakes.....	3.62	174
Mar. 9	.....do.....	2.45	56				
Apr. 26	.....do.....	2.65	77	1908.			
Apr. 29	.....do.....	2.64	74	Oct. 2	J. Jacobs.....	2.20	35
June 25	.....do.....	2.45	55				
Aug. 25	.....do.....	2.45	54	1909.			
Aug. 4	H. W. King.....	2.18	30.3	Apr. 25	R. B. Post.....	3.40	130
Oct. 6	I. Landes.....	2.15	29.1				
Oct. 30	.....do.....	2.18	31.1	1910.			
1906.				Sept. 23	Allen and Davenport...	2.22	33.2
Apr. 11	I. Landes.....	2.70	63				
May 21	.....do.....	3.15	101				
June 14	.....do.....	a 3.40	118				
June 21	Stevens and Landes...	3.15	109				

^a Gage height uncertain.

Daily gage height, in feet, of East Fork at Crescent, Oreg., for 1904-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....				2.5	2.4	2.5	2.5	2.7	2.6	2.35	2.1	2.1
2.....				2.65	2.5	2.5	2.5	2.65	2.6	2.3	2.15	2.1
3.....				2.6	2.7	2.5	2.5	2.65	2.6	2.3	2.15	2.1
4.....				2.65	2.5	2.5	2.5	2.6	2.6	2.65	2.15	2.1
5.....				2.65	2.5	2.5	2.5	2.6	2.6	2.65	2.15	2.1
6.....				2.5	2.5	2.5	2.6	2.6	2.65	2.65	2.2	2.1
7.....				2.6	2.3	2.5	2.55	2.6	2.65	2.2	2.25	2.1
8.....				2.5	2.6	2.5	2.55	2.7	2.6	2.1	2.15	2.1
9.....				2.6	2.65	2.5	2.55	2.8	2.6	2.2	2.18	2.1
10.....				2.5	2.65	2.5	2.5	2.7	2.65	2.15	2.18	2.1
11.....				2.5	2.58	2.5	2.5	2.7	2.6	2.2	2.2	2.1
12.....				2.6	2.6	2.5	2.5	2.65	2.6	2.2	2.15	2.1
13.....				2.65	2.7	2.55	2.5	2.6	2.6	2.2	2.15	2.1
14.....				2.7	2.7	2.55	2.5	2.6	2.6	2.2	2.15	2.1
15.....				2.9	2.8	2.5	2.55	2.6	2.6	2.25	2.18	2.1
16.....				3.1	2.7	2.5	2.55	2.6	2.55	2.2	2.18	2.1
17.....				2.9	2.7	2.5	2.5	2.7	2.5	2.25	2.13	2.1
18.....				2.8	2.8	2.55	2.7	2.7	2.5	2.2	2.15	2.1
19.....				2.7	2.8	2.5	2.5	2.7	2.5	2.2	2.15	2.1
20.....				2.7	2.9	2.55	2.5	2.7	2.5	2.2	2.13	2.1
21.....				2.7	2.8	2.6	2.52	2.7	2.5	2.2	2.12	2.1
22.....				2.7	2.7	2.65	2.5	2.65	2.4	2.15	2.11	2.1
23.....				2.7	2.7	2.55	2.55	2.6	2.45	2.15	2.11	2.1
24.....				2.7	2.7	2.6	2.55	2.6	2.45	2.15	2.11	2.1
25.....				2.7	2.6	2.65	2.55	2.6	2.4	2.15	2.11	2.1
26.....			2.5	2.6	2.6	2.6	2.6	2.6	2.4	2.1	2.11	2.1
27.....			2.5	2.6	2.5	2.65	2.7	2.6	2.4	2.1	2.11	2.13
28.....			2.8	2.6	2.5	2.6	2.7	2.6	2.4	2.1	2.11	2.15
29.....			2.7	2.7	.....	2.5	2.7	2.6	2.35	2.0	2.11	2.15
30.....			2.7	2.5	.....	2.8	2.65	2.6	2.35	2.1	2.11	2.18
31.....			2.7	2.5	.....	2.5	.....	2.6	.....	2.1	2.11	.....

¹ Referred to in earlier reports as East Fork of Deschutes River at Odell.

Daily gage height, in feet, of East Fork at Crescent, Oreg., for 1904-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	2.18	2.29	2.3	2.1	3.2	3.1	2.6	3.25	3.1	3.0	2.4	2.2
2.....	2.18	2.05	2.2	3.1	3.2	2.7	2.6	3.25	3.1	3.0	2.4	2.2
3.....	2.15	1.95	2.2	3.0	3.2	3.05	2.9	3.3	3.1	2.9	2.4	2.2
4.....	2.15	2.18	2.2	3.0	2.8	3.1	2.6	3.35	3.2	3.0	2.3	2.2
5.....	2.15	2.12	2.18	3.0	2.8	3.0	2.55	3.4	3.3	3.1	2.3	2.2
6.....	2.15	2.0	2.18	3.0	3.1	2.9	2.75	3.5	3.4	3.1	2.3	2.5
7.....	2.25	2.0	2.18	3.0	2.9	2.9	2.5	3.5	3.3	3.0	2.2	2.5
8.....	2.3	2.02	2.2	3.0	2.9	3.0	2.8	3.45	3.3	2.9	2.2	2.5
9.....	2.3	2.05	2.2	3.0	2.8	2.9	2.85	3.5	3.3	2.8	2.2	2.5
10.....	2.25	2.05	2.18	2.8	2.9	2.85	2.85	3.55	3.2	2.8	2.2	2.5
11.....	2.2	2.03	2.18	2.8	3.0	2.9	2.7	3.55	3.2	2.75	2.2	2.5
12.....	2.2	1.95	2.18	2.8	3.1	2.8	2.7	3.6	3.3	2.75	2.3	2.5
13.....	2.18	2.25	2.2	2.9	3.1	2.5	2.75	3.6	3.3	2.7	2.3	2.3
14.....	2.18	2.3	2.4	2.9	3.1	3.0	2.8	3.7	3.4	2.7	2.3	2.4
15.....	2.18	2.2	2.4	3.1	3.0	2.9	2.9	3.7	3.4	2.7	2.3	2.4
16.....	2.2	2.2	2.4	3.1	3.0	2.8	3.0	3.6	3.5	2.7	2.3	2.3
17.....	2.2	2.1	2.4	2.4	3.1	2.7	3.0	3.4	3.5	2.7	2.3	2.3
18.....	2.2	2.1	2.3	2.2	3.2	2.7	3.0	3.3	3.4	2.7	2.3	2.3
19.....	2.2	2.1	2.3	2.2	3.2	2.8	3.0	3.1	3.2	2.6	2.3	2.3
20.....	2.18	2.1	2.3	2.2	3.35	2.8	3.0	3.0	3.1	2.6	2.3	2.2
21.....	2.18	2.15	1.9	3.5	3.5	2.8	3.3	3.1	3.1	2.65	2.3	2.2
22.....	2.18	2.0	2.9	3.0	3.3	2.85	3.4	3.1	3.1	2.5	2.3	2.2
23.....	2.18	1.9	2.6	3.4	3.3	3.2	3.4	2.9	3.1	2.5	2.3	2.2
24.....	2.18	1.8	2.9	3.4	3.0	3.1	3.4	2.9	3.0	2.5	2.5	2.2
25.....	2.18	1.85	2.9	3.4	2.85	3.1	3.45	2.9	3.0	2.5	2.5	2.2
26.....	2.2	1.9	2.9	3.4	2.85	3.0	3.3	3.0	3.0	2.45	2.5	2.2
27.....	2.2	2.1	2.9	2.9	2.8	3.0	3.25	3.0	3.0	2.45	2.5	2.2
28.....	2.2	2.1	2.0	3.2	3.25	2.75	3.25	3.3	3.0	2.45	2.5	2.2
29.....	2.19	2.1	1.9	3.2	-----	2.65	3.2	3.2	3.0	2.45	2.2	2.2
30.....	2.18	2.1	1.9	3.2	-----	2.7	3.25	3.2	3.0	2.4	2.2	2.2
31.....	2.18	-----	1.8	3.2	-----	3.1	-----	3.1	-----	2.4	2.2	-----
1906-7.												
1.....	2.2	2.2	2.75	2.7	3.5	3.3	3.1	4.0	3.8	3.1	2.5	2.4
2.....	2.2	2.2	2.65	2.9	3.6	3.3	3.1	4.0	3.85	3.1	2.5	2.4
3.....	2.2	2.2	2.7	2.8	3.5	3.3	3.0	3.9	4.0	3.1	2.5	2.4
4.....	2.2	2.3	2.75	2.7	4.0	3.2	3.0	3.9	4.0	3.1	2.5	2.4
5.....	2.2	2.3	2.5	3.7	4.3	3.1	3.1	3.9	4.0	3.1	2.5	2.4
6.....	2.2	2.4	2.5	3.1	5.2	3.1	2.9	3.5	4.0	3.0	2.5	2.4
7.....	2.2	2.6	2.5	2.9	4.9	3.2	3.2	3.5	4.0	3.0	2.5	2.4
8.....	2.2	2.4	2.5	3.0	4.8	3.2	3.7	3.7	3.9	3.2	2.5	2.4
9.....	2.2	2.4	2.5	2.9	4.5	3.1	3.7	3.7	3.7	3.1	2.6	2.4
10.....	2.2	2.4	2.5	2.9	3.8	3.1	3.75	3.8	3.5	3.0	2.6	2.4
11.....	2.2	2.65	2.7	2.9	4.2	3.1	3.7	3.9	3.7	2.9	2.55	2.4
12.....	2.2	2.65	2.6	2.9	4.0	3.1	3.7	4.0	3.8	2.9	2.55	2.4
13.....	2.2	2.65	2.5	3.0	3.7	3.1	3.7	3.9	3.7	2.9	2.6	2.4
14.....	2.2	2.65	2.5	3.0	3.5	3.0	3.75	3.8	3.6	2.9	2.6	2.4
15.....	2.2	2.4	2.4	2.9	3.4	3.0	3.8	3.75	3.6	2.9	2.55	2.4
16.....	2.2	2.7	2.5	2.85	3.4	3.0	3.9	3.8	3.3	2.8	2.5	2.4
17.....	2.65	2.6	2.5	2.9	3.4	3.0	3.9	3.9	3.0	2.8	2.5	2.4
18.....	2.3	2.65	2.5	3.0	3.4	3.1	3.95	3.9	3.2	2.8	2.5	2.4
19.....	2.3	2.4	2.6	3.0	3.4	3.3	4.0	4.05	3.3	2.7	2.45	2.4
20.....	2.3	2.6	2.5	3.0	3.4	3.7	4.1	4.2	3.3	2.7	2.4	2.4
21.....	2.65	2.6	2.5	3.0	3.35	3.4	4.1	4.2	3.3	2.7	2.4	2.4
22.....	2.65	2.55	2.45	3.0	3.4	3.1	4.1	4.1	3.3	2.7	2.4	2.4
23.....	2.65	2.5	2.4	3.0	3.4	3.1	4.1	4.0	3.3	2.7	2.4	2.4
24.....	2.65	2.7	2.45	2.9	3.4	3.1	4.2	3.9	3.2	2.7	2.4	2.4
25.....	2.2	2.65	2.5	2.9	3.6	3.0	4.2	3.8	3.2	2.6	2.45	2.4
26.....	2.2	2.85	2.7	3.0	3.4	3.0	4.2	3.7	3.2	2.6	2.4	2.4
27.....	2.2	2.85	2.6	3.0	3.3	3.0	4.2	3.7	3.2	2.6	2.4	2.4
28.....	2.2	2.65	2.5	3.05	3.2	3.0	4.1	3.7	3.2	2.6	2.4	2.4
29.....	2.2	2.7	2.5	3.1	-----	3.0	4.1	3.7	3.2	2.6	2.4	2.4
30.....	2.2	2.65	2.5	3.15	-----	3.0	4.1	3.7	3.2	2.6	2.4	2.4
31.....	2.2	-----	2.4	3.3	-----	3.1	-----	3.8	-----	2.5	2.4	-----

Daily gage height, in feet, of East Fork at Crescent, Oreg., for 1904-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1907-8.							1907-8.						
1.....	2.4	2.25	2.25	2.9	2.55	2.5	16.....	2.3	2.25	2.8	2.6	2.9	3.1
2.....	2.4	2.25	2.3	2.9	2.7	2.4	17.....	2.25	2.3	2.3	2.5	2.8	3.0
3.....	2.35	2.25	2.3	2.8	2.85	2.4	18.....	2.25	2.35	2.3	2.5	2.7	2.9
4.....	2.35	2.25	2.3	2.7	2.8	2.3	19.....	2.25	2.3	2.3	2.5	2.8	2.7
5.....	2.35	2.25	2.3	2.6	2.8	2.3	20.....	2.25	2.3	2.3	2.5	2.8	2.5
6.....	2.35	2.25	2.3	2.6	2.8	2.3	21.....	2.25	2.3	2.8	2.45	2.8	2.5
7.....	2.35	2.25	2.3	2.6	2.8	2.85	22.....	2.25	2.3	2.95	2.65	2.8	2.7
8.....	2.35	2.25	2.3	2.6	2.8	2.85	23.....	2.25	2.3	3.6	2.8	2.8	2.7
9.....	2.3	2.25	2.3	2.6	2.8	2.4	24.....	2.25	2.3	3.6	2.7	2.8	2.8
10.....	2.3	2.25	2.3	2.6	2.8	2.7	25.....	2.25	2.55	3.3	2.55	2.8	2.8
11.....	2.3	2.25	2.35	2.6	2.8	2.5	26.....	2.25	2.4	3.4	2.55	2.8	2.8
12.....	2.3	2.25	2.45	2.6	2.7	2.5	27.....	2.25	2.3	3.5	2.45	2.8	2.7
13.....	2.3	2.25	2.7	2.6	2.7	2.65	28.....	2.25	2.3	3.3	2.45	2.7	2.6
14.....	2.3	2.25	2.8	2.6	2.8	3.0	29.....	2.25	2.3	3.0	2.8	2.6	2.5
15.....	2.3	2.25	2.9	2.6	3.1	3.0	30.....	2.25	2.3	3.0	2.68	.....	2.5
							31.....	2.25	.....	2.9	2.7	.....	2.6

NOTE.—Ice present Jan. 10 to Feb. 28, 1905, and Jan. 10 to Feb. 5, 1907, and probably at other times.

Daily discharge, in second-feet, of East Fork at Crescent, Oreg., for 1904-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....				60	50	60	60	81	70	46	25	25
2.....				76	60	60	60	76	70	41	28	25
3.....				70	81	60	60	76	70	41	28	25
4.....				76	60	60	60	70	70	76	28	25
5.....				76	60	60	60	70	70	76	28	25
6.....				60	60	60	70	70	76	76	32	25
7.....				70	41	60	65	70	76	32	36	25
8.....				60	70	60	65	81	70	25	28	25
9.....				70	76	60	65	92	70	32	31	25
10.....				60	76	60	60	81	76	28	31	25
11.....				60	68	60	60	81	70	32	32	25
12.....				70	70	60	60	76	70	32	28	25
13.....				76	81	65	60	70	70	32	28	25
14.....				81	81	65	60	70	70	32	28	25
15.....				104	92	60	65	70	70	36	31	25
16.....				131	81	60	65	70	65	32	31	25
17.....				104	81	60	60	81	60	36	27	25
18.....				92	92	65	81	81	60	32	28	25
19.....				81	92	60	60	81	60	32	28	25
20.....				81	104	65	60	81	60	32	27	25
21.....				81	92	70	62	81	60	32	26	25
22.....				81	81	76	60	76	50	28	26	25
23.....				81	81	65	65	70	55	28	26	25
24.....				81	81	70	65	70	55	28	26	25
25.....				81	70	76	65	70	50	28	26	25
26.....				60	70	70	70	70	50	25	26	25
27.....				60	70	60	76	81	70	25	26	27
28.....				92	70	60	70	81	70	25	26	28
29.....				81	81	.....	60	81	70	46	19	26
30.....				81	60	.....	92	76	70	46	25	26
31.....				81	60	60	60	70	.....	25	26	.....

Daily discharge, in second-feet, of East Fork at Crescent, Oreg., for 1904-1908—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	31	40	41	24	110	100	56	116	100	90	42	30
2.....	31	22	32	100	110	64	56	116	100	90	42	30
3.....	28	16	32	90	110	95	81	121	100	81	42	30
4.....	28	31	32	90	72	100	56	127	110	90	36	30
5.....	28	26	31	90	72	90	52	133	121	100	36	30
6.....	28	19	31	90	100	81	68	146	133	100	36	49
7.....	36	19	31	90	81	81	49	146	121	90	30	49
8.....	41	20	32	90	81	90	72	140	121	81	30	49
9.....	41	22	32	90	72	81	76	146	121	72	30	49
10.....	36	22	31	72	81	76	76	153	110	72	30	49
11.....	32	21	31	72	90	81	64	153	110	68	30	49
12.....	32	16	31	72	100	72	64	160	121	68	36	49
13.....	31	36	32	81	100	49	68	160	121	64	36	36
14.....	31	41	30	81	100	90	72	174	133	64	36	42
15.....	31	32	28	100	90	81	81	174	133	64	36	42
16.....	32	32	26	100	90	72	90	160	146	64	36	36
17.....	32	25	23	42	100	64	90	133	146	64	36	36
18.....	32	25	21	30	110	64	90	121	133	64	36	36
19.....	32	25	19	30	110	72	90	100	110	56	36	36
20.....	31	25	17	30	127	72	90	90	100	56	36	30
21.....	31	28	14	146	146	72	121	100	100	60	36	30
22.....	31	19	14	90	121	76	133	100	100	49	36	30
23.....	31	14	14	133	121	110	133	81	100	49	36	30
24.....	31	10	14	133	90	100	133	81	90	49	49	30
25.....	31	12	14	133	76	100	140	81	90	49	49	30
26.....	32	14	14	133	76	90	121	90	90	46	49	30
27.....	32	25	14	81	72	90	116	90	90	46	49	30
28.....	32	25	14	110	116	68	116	121	90	46	49	30
29.....	31	25	14	110	-----	60	110	110	90	46	30	30
30.....	31	25	14	110	-----	64	116	110	90	42	30	30
31.....	31	-----	10	110	-----	100	-----	100	-----	42	30	-----
1906-7.												
1.....	30	30	68	64	146	121	100	216	188	100	49	42
2.....	30	30	60	81	160	121	100	216	195	100	49	42
3.....	30	30	64	72	146	121	90	202	216	100	49	42
4.....	30	36	68	64	216	110	90	202	216	100	49	42
5.....	30	36	49	174	260	100	100	202	216	100	49	42
6.....	30	42	49	100	395	100	81	146	216	90	49	42
7.....	30	56	49	81	350	110	110	146	216	90	49	42
8.....	30	42	49	90	335	110	174	174	202	110	49	42
9.....	30	42	49	81	290	100	174	174	174	100	56	42
10.....	30	42	49	81	188	100	181	188	146	90	56	42
11.....	30	60	64	81	245	100	174	202	174	81	52	42
12.....	30	60	56	81	216	100	174	216	188	81	52	42
13.....	30	60	49	90	174	100	174	202	174	81	56	42
14.....	30	60	49	90	146	90	181	188	160	81	56	42
15.....	30	42	42	81	133	90	188	181	160	81	52	42
16.....	30	64	49	76	133	90	202	188	121	72	49	42
17.....	60	56	49	81	133	90	202	202	90	72	49	42
18.....	36	60	49	90	133	100	209	202	110	72	49	42
19.....	36	42	56	90	133	121	216	223	121	64	46	42
20.....	36	56	49	90	133	174	230	245	121	64	42	42
21.....	60	56	49	90	127	133	230	245	121	64	42	42
22.....	60	52	46	90	133	100	230	230	121	64	42	42
23.....	60	49	42	90	133	100	230	216	121	64	42	42
24.....	60	64	46	81	133	100	245	202	110	64	42	42
25.....	30	60	49	81	160	90	245	188	110	56	46	42
26.....	30	76	64	90	133	90	245	174	110	56	42	42
27.....	30	76	56	90	121	90	245	174	110	56	42	42
28.....	30	60	49	95	110	90	230	174	110	56	42	42
29.....	30	64	49	100	-----	90	230	174	110	56	42	42
30.....	30	60	49	115	-----	90	230	174	110	56	42	42
31.....	30	-----	42	121	-----	100	-----	188	-----	49	42	-----

Daily discharge, in second-feet, of East Fork at Crescent, Oreg., for 1904-1908—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1907-8.							1907-8.						
1.....	42	33	33	81	52	49	16.....	36	33	72	56	81	100
2.....	42	33	36	81	64	42	17.....	33	36	36	49	72	90
3.....	39	33	36	72	76	42	18.....	33	39	36	49	64	81
4.....	39	33	36	64	72	36	19.....	33	36	36	49	72	64
5.....	39	33	36	56	72	36	20.....	33	36	36	49	72	49
6.....	39	33	36	56	72	36	21.....	33	36	72	46	72	49
7.....	39	33	36	56	72	76	22.....	33	36	86	60	72	64
8.....	39	33	36	56	72	76	23.....	33	36	160	72	72	64
9.....	36	33	36	56	72	42	24.....	33	36	160	64	72	72
10.....	36	33	36	56	72	64	25.....	33	52	121	52	72	72
11.....	36	33	39	56	72	49	26.....	33	42	133	52	72	72
12.....	36	33	46	56	64	49	27.....	33	36	146	46	72	64
13.....	35	33	64	56	64	60	28.....	33	36	121	46	64	56
14.....	36	33	72	56	72	90	29.....	33	36	90	72	56	49
15.....	36	33	81	56	100	90	30.....	33	36	90	62	.....	49
							31.....	33	.....	81	64	.....	56

NOTE.—Discharge determined as follows: 1904 and 1905, from rating curves well defined between 25 and 100 second-feet; 1906 to 1908, from curves fairly well defined between 60 and 160 second-feet. Discharges for winter periods subject to much uncertainty on account of possible obstruction of channel by ice, about which no notes were made.

Monthly discharge of East Fork at Crescent, Oreg., for 1905-1908.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
January.....	131	60	76.6	4,710	C.
February.....	104	41	74.0	4,110	B.
March.....	92	60	64.7	3,980	A.
April.....	81	60	65.4	3,890	A.
May.....	92	70	74.7	4,590	A.
June.....	76	46	62.8	3,740	A.
July.....	76	19	35.1	2,160	A.
August.....	36	25	28.0	1,720	A.
September.....	31	25	25.5	1,520	A.
The period.....				30,400	
1905-6.					
October.....	41	28	31.9	1,960	A.
November.....	41	10	23.7	1,410	B.
December.....	41	10	23.6	1,450	C.
January.....	146	24	88.8	5,460	C.
February.....	146	72	97.3	5,400	C.
March.....	110	49	80.8	4,970	B.
April.....	140	49	89.3	5,310	B.
May.....	174	81	124	7,620	B.
June.....	146	90	111	6,600	B.
July.....	100	42	65.2	4,010	B.
August.....	49	30	37.1	2,280	B.
September.....	49	30	36.2	2,150	B.
The year.....	174	10	67.4	48,600	
1906-7.					
October.....	60	30	35.4	2,180	B.
November.....	76	30	52.1	3,100	B.
December.....	68	42	51.8	3,190	C.
January.....	174	64	89.7	5,520	C.
February.....	395	110	183	10,200	C.
March.....	174	90	104	6,400	B.
April.....	245	81	184	10,900	B.
May.....	245	146	195	12,000	C.
June.....	216	90	151	8,980	B.
July.....	110	49	76.5	4,700	B.
August.....	56	42	47.5	2,920	B.
September.....	42	42	42.0	2,500	B.
The year.....	395	30	101	72,600	
1907-8.					
October.....	42	33	35.5	2,180	B.
November.....	52	33	35.2	2,090	B.
December.....	160	33	68.9	4,240	C.
January.....	81	46	58.1	3,570	C.
February.....	100	52	70.8	4,070	B.
March.....	100	36	60.9	3,740	B.
The period.....				19,900	

EAST FORK ¹ NEAR LAPINE, OREG.

Location.—In sec. 11, T. 22 S., R. 10 E., at highway bridge at former town of Rosland, about a mile north of Lapine.

Records presented.—September 22 to September 30, 1910.

Drainage area.—535 square miles.

Gage.—Vertical staff.

Channel.—Sand and clay; somewhat shifting; affected by growth of weeds.

Discharge measurements.—Made from the down rail of the highway bridge or by wading.

Cooperation.—Gage readings furnished by United States Forest Service.

The following discharge measurement was made by Allen and Davenport:
September 22, 1910: Gage height, 1.15 feet; discharge, 132 second-feet.

Daily gage height, in feet, of East Fork near Lapine, Oreg., for 1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1.....		11.....		21.....	
2.....		12.....		22.....	1.14
3.....		13.....		23.....	1.10
4.....		14.....		24.....	1.06
5.....		15.....		25.....	1.03
6.....		16.....		26.....	1.02
7.....		17.....		27.....	1.00
8.....		18.....		28.....	
9.....		19.....		29.....	
10.....		20.....		30.....	.98
				31.....	

EAST FORK ¹ AT ALLEN'S RANCH, NEAR LAVA, OREG.

Location.—In the SW. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 8, T. 20 S., R. 11 E., on C. B. Allen's ranch, about 1 mile north of former post office of Lava, Oreg., and about half a mile above junction with Deschutes River; 18 miles south of Bend.

Records presented.—February 17, 1905, to September 30, 1910.

Drainage area.—About 720 square miles.

Gage.—Inclined staff on right bank of river.

Channel.—Clay; considerable growth of weeds during summer months.

Discharge measurements.—Made from a cable about 50 feet below gage.

Winter flow.—Discharge relation rather seriously affected by ice.

Accuracy.—Results fair. Discharge relation at times affected by backwater from Deschutes River.

Discharge measurements of East Fork at Allen's ranch, near Lava, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 2	Ivan Landes.....	6.44	286	Apr. 9	I. E. Oakes.....	7.02	415
Apr. 24	do.....	6.20	277				
May 23	do.....	6.34	270	1908.			
June 23	do.....	6.00	198	Mar. 27	H. D. McGlashan.....	6.38	335
23	do.....	6.00	208	Apr. 5	do.....	6.04	277
Aug. 9	do.....	5.29	104	June 22	do.....	7.13	406
Nov. 18	do.....	5.00	100	Oct. 25	R. B. Post.....	5.90	178
Dec. 8	do.....	5.08	107				
1906.				1909.			
Apr. 14	Ivan Landes.....	6.21	317	Apr. 22	R. B. Post.....	7.08	432
May 1	do.....	6.96	422				
June 12	do.....	7.15	485	1910.			
June 12	do.....	6.94	413	Apr. 26	L. R. Allen.....	7.38	509
21	J. C. Stevens.....	6.67	368	June 20	do.....	6.40	258
1907.				Sept. 21	R. W. Davenport.....	5.66	112
Apr. 7	I. E. Oakes.....	6.62	377				

¹ Formerly known as Deschutes River and Little River.

Daily gage height, in feet, of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1						6.45	6.55	6.35	6.3	5.95	5.4	5.05
2						6.45	6.55	6.4	6.3	5.85	5.4	5.05
3						6.45	6.55	6.45	6.4	5.85	5.4	5.05
4						6.5	6.55	6.5	6.45	5.8	5.3	5.0
5						6.5	6.5	6.4	6.4	5.8	5.3	5.0
6						6.5	6.5	6.35	6.4	5.75	5.3	5.0
7						6.5	6.45	6.3	6.4	5.7	5.3	5.0
8						6.5	6.45	6.4	6.35	5.7	5.3	5.0
9						6.45	6.45	6.45	6.3	5.65	5.3	5.0
10						6.4	6.45	6.5	6.3	5.6	5.3	5.0
11						6.4	6.4	6.55	6.25	5.55	5.3	5.0
12						6.4	6.3	6.55	6.25	5.55	5.3	5.0
13						6.4	6.3	6.5	6.3	5.55	5.25	5.05
14						6.4	6.3	6.4	6.2	5.55	5.2	5.05
15						6.45	6.3	6.35	6.2	5.5	5.2	5.05
16						6.5	6.35	6.4	6.15	5.5	5.2	5.05
17					6.3	6.5	6.35	6.3	6.15	5.5	5.2	5.05
18					6.32	6.5	6.35	6.3	6.1	5.5	5.2	5.05
19					6.4	6.5	6.35	6.3	6.1	5.5	5.2	5.05
20					6.7	6.55	6.3	6.3	6.1	5.45	5.15	5.0
21					6.75	6.65	6.3	6.3	6.05	5.4	5.15	5.0
22					6.6	6.75	6.25	6.35	6.0	5.4	5.1	5.0
23					6.65	6.75	6.25	6.35	6.0	5.4	5.1	5.0
24					6.4	6.7	6.2	6.3	6.0	5.4	5.1	5.0
25					6.5	6.7	6.2	6.25	6.05	5.4	5.1	5.0
26					6.5	6.75	6.2	6.35	6.0	5.35	5.1	5.0
27					6.45	6.75	6.2	6.3	6.1	5.3	5.1	5.0
28					6.4	6.8	6.2	6.35	6.05	5.3	5.1	5.05
29					6.75	6.25	6.35	6.0	5.3	5.05	5.05	5.05
30					6.65	6.3	6.35	6.0	5.3	5.05	5.1	5.05
31					6.55		6.3	6.3		5.3	5.05	5.05
1905-6.												
1	5.15	5.15	5.1	5.4	5.7	5.3	5.6	7.0	6.65	6.45	5.5	5.2
2	5.2	5.1	5.1	5.35	5.7	5.2	5.6	6.9	6.6	6.4	5.5	5.15
3	5.1	5.05	5.1	5.35	5.7	5.25	5.65	6.9	6.7	6.3	5.5	5.15
4	5.1	5.05	5.1	5.35	5.5	5.2	5.6	6.9	6.65	6.3	5.5	5.15
5	5.1	5.05	5.0	5.45	5.45	5.25	5.7	6.95	6.6	6.35	5.5	5.15
6	5.1	5.0	5.0	5.5	5.4	5.2	5.85	7.0	6.85	6.35	5.45	5.15
7	5.15	5.0	4.95	5.5	5.4	5.2	6.0	7.05	7.0	6.35	5.45	5.15
8	5.2	5.0	5.15	5.5	5.45	5.3	6.1	7.1	7.0	6.35	5.45	5.15
9	5.3	5.0	4.9	5.5	5.4	5.25	6.15	7.15	7.05	6.35	5.4	5.2
10	5.3	5.0	5.0	5.5	5.35	5.2	6.2	7.15	7.1	6.3	5.4	5.2
11	5.2	5.0	5.0	5.6	5.3	5.35	6.25	7.15	7.15	6.2	5.4	5.25
12	5.2	5.0	5.0	5.6	5.25	5.65	6.25	7.15	7.0	6.2	5.5	5.25
13	5.15	5.0	5.0	5.6	5.15	5.75	6.2	7.2	6.95	6.2	5.45	5.3
14	5.15	4.9	5.0	5.6	5.1	5.5	6.25	7.25	6.85	6.2	5.4	5.3
15	5.15	4.85	5.05	5.6	5.15	5.5	6.35	7.35	6.85	6.15	5.4	5.35
16	5.2	4.9	5.1	5.75	5.15	5.5	6.5	7.35	6.85	6.15	5.4	5.3
17	5.2	5.0	5.1	5.75	5.1	5.55	6.65	7.35	6.85	6.1	5.35	5.3
18	5.25	5.0	5.1	5.8	5.15	5.5	6.82	7.4	6.85	6.1	5.3	5.3
19	5.2	5.1	5.15	5.7	5.65	5.5	6.9	7.35	6.8	6.1	5.3	5.3
20	5.2	5.1	5.2	5.85	5.4	5.5	6.9	7.1	6.75	5.95	5.3	5.25
21	5.2	5.1	5.3	5.9	5.3	5.5	6.95	6.95	6.7	5.95	5.3	5.2
22	5.2	5.0	5.2	5.95	5.35	5.55	7.05	6.8	6.6	5.85	5.3	5.2
23	5.15	5.0	5.05	5.95	5.4	5.7	7.18	6.75	6.55	5.8	5.35	5.2
24	5.15	5.0	5.15	5.95	5.45	5.6	7.28	6.65	6.5	5.75	5.3	5.2
25	5.15	5.0	5.15	6.1	5.4	5.75	7.35	6.65	6.45	5.75	5.3	5.2
26	5.15	5.0	5.25	6.1	5.3	5.7	7.35	6.6	6.5	5.7	5.3	5.2
27	5.15	5.1	5.3	6.1	5.3	5.6	7.35	6.6	6.5	5.65	5.25	5.2
28	5.15	5.1	5.3	6.1	5.4	5.7	7.25	6.8	6.45	5.65	5.25	5.2
29	5.15	5.0	5.3	6.1		5.7	7.2	6.85	6.45	5.65	5.2	5.2
30	5.15	5.0	5.3	5.9		5.8	7.1	7.0	6.45	5.6	5.2	5.2
31	5.15		5.3	5.9		5.85		7.05		5.55	5.2	

Daily gage height, in feet, of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	5.15	5.1	5.45	5.3	6.6	7.0	6.5	8.0	7.5	6.9	6.25	6.1
2.....	5.15	5.1	5.35	5.3	6.75	6.9	6.55	8.0	7.5	6.85	6.25	6.1
3.....	5.15	5.1	5.4	5.7	6.9	6.8	6.55	7.95	7.5	6.85	6.25	6.1
4.....	5.15	5.1	5.45	6.1	7.1	6.7	6.5	7.85	7.55	6.85	6.2	6.05
5.....	5.15	5.2	5.45	6.6	7.55	6.65	6.45	7.8	7.6	6.85	6.15	6.1
6.....	5.15	5.3	5.4	6.45	7.9	6.6	6.55	7.75	7.65	6.8	6.15	6.1
7.....	5.15	5.3	5.4	6.4	7.95	6.6	6.7	7.7	7.7	6.75	6.15	6.1
8.....	5.15	5.35	5.45	6.4	8.0	6.6	6.8	7.65	7.75	6.75	6.15	6.0
9.....	5.1	5.55	5.45	6.35	9.65	6.6	7.0	7.6	7.75	6.75	6.15	6.0
10.....	5.1	5.65	5.4	6.2	10.58	6.6	7.2	7.65	7.75	6.75	6.2	6.0
11.....	5.1	5.6	5.4	6.2	10.1	6.6	7.35	7.7	7.75	6.75	6.25	5.95
12.....	5.15	5.55	5.7	6.15	9.6	6.5	7.45	7.7	7.7	6.75	6.2	5.9
13.....	5.15	5.0	5.4	6.15	9.35	6.4	7.55	7.75	7.65	6.7	6.15	5.9
14.....	5.2	5.55	5.3	6.05	9.3	6.35	7.65	7.8	7.6	6.7	6.15	5.9
15.....	5.2	5.55	5.45	5.9	8.75	6.3	7.7	7.85	7.6	6.65	6.15	5.9
16.....	5.2	5.65	5.4	6.0	8.55	6.2	7.65	7.85	7.6	6.6	6.1	5.9
17.....	5.3	5.9	5.35	5.95	8.45	6.3	7.65	7.8	7.55	6.6	6.05	5.95
18.....	5.3	5.9	5.4	5.95	7.9	6.6	7.7	7.7	7.5	6.5	6.05	5.95
19.....	5.3	5.9	5.45	6.05	7.45	6.85	7.75	7.6	7.35	6.5	6.05	5.95
20.....	5.25	5.85	5.5	6.1	7.35	7.15	7.75	7.6	7.25	6.45	6.05	5.95
21.....	5.2	5.85	5.65	6.05	7.25	7.2	7.8	7.7	7.1	6.45	6.0	5.9
22.....	5.2	5.8	5.75	6.0	7.25	7.25	7.8	7.85	7.0	6.45	6.0	5.9
23.....	5.15	5.7	5.7	5.9	7.25	7.15	7.8	7.95	7.0	6.45	6.0	5.9
24.....	5.15	5.45	5.65	5.9	7.1	6.7	7.85	8.05	7.0	6.35	6.05	5.85
25.....	5.15	5.45	5.75	5.95	7.1	6.7	7.85	8.1	7.0	6.35	6.1	5.8
26.....	5.1	5.45	5.85	6.0	7.05	6.6	7.9	8.1	7.0	6.35	6.15	5.8
27.....	5.1	5.45	5.9	6.0	7.1	6.5	7.9	8.0	6.9	6.35	6.1	5.8
28.....	5.1	5.45	6.0	6.05	7.1	6.45	7.95	7.85	6.9	6.35	6.05	5.85
29.....	5.1	5.45	5.9	6.1	.....	6.4	8.0	7.7	6.9	6.3	6.05	5.85
30.....	5.1	5.45	5.8	6.2	.....	6.35	8.0	7.65	6.9	6.3	6.05	5.85
31.....	5.1	.....	5.8	6.35	.....	6.35	.....	7.55	.....	6.25	6.0	.....
1907-8.												
1.....	5.8	5.7	5.95	7.0	.....	5.7	6.0	7.35	6.5	6.65	6.1	5.8
2.....	5.8	5.7	5.85	7.0	.....	5.55	5.95	7.0	6.5	6.65	6.1	5.75
3.....	5.8	5.7	5.7	6.9	.....	5.5	5.9	6.9	6.5	6.65	6.05	5.7
4.....	5.8	5.7	5.7	6.8	.....	5.5	5.95	7.05	6.5	6.65	6.05	5.7
5.....	5.8	5.7	5.7	.....	.....	5.5	5.9	7.1	6.45	6.65	6.0	5.7
6.....	5.75	5.65	5.75	.....	.....	5.4	5.95	7.1	6.4	6.65	6.0	5.7
7.....	5.75	5.65	5.75	.....	.....	5.4	6.0	7.1	6.4	6.65	6.0	5.7
8.....	5.75	5.6	5.8	.....	.....	5.4	6.0	7.1	6.45	6.6	6.0	5.7
9.....	5.7	5.6	5.8	.....	.....	5.4	6.0	7.1	6.5	6.6	6.0	5.7
10.....	5.7	5.6	5.8	.....	.....	5.45	6.1	7.1	6.5	6.6	5.9	5.7
11.....	5.7	5.6	5.85	.....	.....	5.5	6.2	7.05	6.6	6.55	5.85	5.7
12.....	5.7	5.6	6.0	.....	.....	5.6	6.3	7.0	6.75	6.55	5.85	5.7
13.....	5.7	5.6	5.9	.....	.....	5.65	6.4	7.0	6.8	6.65	5.85	5.7
14.....	5.7	5.6	5.8	.....	.....	5.85	6.5	7.0	6.85	6.7	5.9	5.7
15.....	5.7	5.6	5.9	.....	.....	6.15	6.6	7.05	6.9	6.75	5.9	5.7
16.....	5.7	5.6	6.0	.....	.....	6.45	6.7	7.1	6.9	6.7	5.9	5.7
17.....	5.7	5.6	6.1	.....	.....	6.7	6.75	7.1	6.9	6.6	5.85	5.7
18.....	5.65	5.55	6.0	.....	.....	6.9	6.8	7.0	7.0	6.6	5.8	5.7
19.....	5.65	5.55	5.95	.....	.....	6.8	6.85	6.9	7.0	6.55	5.8	5.8
20.....	5.65	5.6	5.95	.....	.....	6.6	6.9	6.85	7.1	6.45	5.8	5.7
21.....	5.65	5.65	5.95	.....	.....	6.4	7.0	6.8	7.1	6.45	5.8	6.5
22.....	5.65	5.7	6.55	.....	.....	6.3	7.1	6.7	7.15	6.55	5.8	6.5
23.....	5.65	5.7	6.75	.....	.....	6.3	7.2	6.65	7.2	6.6	5.75	6.5
24.....	5.65	5.75	7.05	.....	.....	6.3	7.35	6.6	7.15	6.5	5.75	5.7
25.....	5.65	5.75	7.5	.....	.....	6.4	7.4	6.5	6.95	6.45	5.75	5.7
26.....	5.65	5.8	7.6	.....	.....	6.45	7.5	6.5	6.85	6.4	5.75	5.7
27.....	5.65	5.8	7.6	.....	.....	6.4	7.55	6.45	6.8	6.3	5.75	6.0
28.....	5.65	5.85	7.5	.....	.....	6.2	7.5	6.45	6.7	6.3	5.75	6.0
29.....	5.7	5.85	7.3	.....	.....	6.1	7.35	6.45	6.65	6.2	5.75	5.0
30.....	5.7	5.9	7.1	.....	.....	6.05	7.2	6.45	6.65	6.15	5.8	6.0
31.....	5.7	.....	7.1	.....	.....	6.05	.....	6.5	.....	6.15	5.8	.....

Daily gage height, in feet, of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	5.6	5.9	5.75	5.75	6.85	6.15	6.0	7.25	7.1	6.55	5.9	5.55
2.....	5.6	5.9	5.7	5.75	6.9	6.2	6.05	7.3	7.15	6.6	5.9	5.65
3.....	5.6	5.85	5.7	5.8	7.15	6.3	6.1	7.3	7.15	6.55	5.85	5.75
4.....	5.6	5.8	5.65	5.9	7.2	6.2	6.3	7.3	7.1	6.55	5.85	5.75
5.....	5.6	5.75	5.6	6.0	7.2	6.15	6.35	7.25	7.15	6.5	5.85	5.75
6.....	5.55	5.7	5.5	6.1	7.1	6.05	6.2	7.25	7.25	6.5	5.8	5.7
7.....	5.55	5.7	5.5	6.2	6.9	6.0	6.1	7.25	7.35	6.55	5.8	5.7
8.....	5.5	5.65	5.6	6.2	6.75	5.9	6.1	7.3	7.4	6.6	5.75	5.65
9.....	5.5	5.65	5.5	6.3	6.65	5.85	6.15	7.4	7.45	6.6	5.75	5.6
10.....	5.5	5.6	5.5	6.25	6.6	5.8	6.25	7.4	7.45	6.55	5.75	5.6
11.....	5.5	5.6	5.55	6.2	6.5	5.8	6.4	7.35	7.4	6.5	5.75	5.6
12.....	5.5	5.6	5.5	6.3	6.55	5.8	6.45	7.35	7.3	6.5	5.7	5.6
13.....	5.5	5.6	5.6	6.3	6.6	5.8	6.4	7.35	7.2	6.5	5.7	5.6
14.....	5.8	5.55	5.5	6.3	6.6	5.85	6.6	7.3	7.15	6.4	5.7	5.6
15.....	6.2	5.55	5.5	6.4	6.7	5.9	6.75	7.25	7.15	6.35	5.7	5.6
16.....	6.65	5.55	5.5	6.6	6.8	6.0	6.85	7.2	7.2	6.3	5.7	5.6
17.....	6.8	5.55	5.6	6.8	7.1	6.1	6.9	7.1	7.25	6.2	5.7	5.5
18.....	6.6	5.55	5.6	7.0	7.05	6.1	7.0	7.0	7.3	6.2	5.65	5.5
19.....	6.45	5.6	5.6	7.15	6.95	6.15	7.05	6.9	7.45	6.2	5.65	5.5
20.....	6.3	5.7	5.55	7.45	6.95	5.95	7.1	6.85	7.45	6.15	5.65	5.5
21.....	6.2	5.8	5.55	7.7	6.9	5.85	7.05	6.75	7.35	6.15	5.65	5.45
22.....	6.1	6.1	5.55	7.75	6.7	5.8	7.1	6.75	7.2	6.15	5.6	5.45
23.....	6.0	6.15	5.6	7.8	6.5	5.8	7.05	6.7	7.1	6.1	5.6	5.45
24.....	5.95	6.1	5.6	7.8	6.4	5.85	7.0	6.7	7.0	6.05	5.6	5.45
25.....	5.9	6.0	5.6	7.75	6.25	5.9	7.0	6.65	6.9	6.05	5.6	5.45
26.....	5.85	5.9	5.55	7.7	6.15	5.95	7.0	6.6	6.85	6.0	5.6	5.45
27.....	5.8	5.7	5.6	7.4	6.1	6.0	7.05	6.65	6.8	6.0	5.6	5.5
28.....	5.8	5.6	5.7	7.3	6.1	6.05	7.1	6.7	6.8	6.0	5.6	5.5
29.....	5.8	5.65	5.8	7.05	-----	6.1	7.1	6.8	6.75	5.95	5.55	5.5
30.....	5.8	5.8	5.8	6.9	-----	6.05	7.2	6.9	6.7	5.95	5.55	5.5
31.....	5.8	-----	5.8	6.9	-----	6.0	-----	7.0	-----	5.95	5.55	-----
1909-10.												
1.....	5.5	5.65	9.32	7.0	7.3	7.8	7.25	7.55	6.75	6.05	5.65	5.5
2.....	5.5	5.7	9.2	7.2	7.4	8.05	7.3	7.6	6.7	6.05	5.65	5.5
3.....	5.5	5.75	9.0	7.6	8.1	8.1	7.3	7.7	6.7	6.05	5.65	5.45
4.....	5.5	5.85	8.7	7.7	7.9	8.4	7.3	7.7	6.65	6.1	5.65	5.45
5.....	5.55	5.8	8.5	7.65	7.7	9.0	7.3	7.65	6.65	6.1	5.6	5.45
6.....	5.55	5.75	8.3	7.65	6.7	8.6	7.25	7.6	6.6	6.05	5.6	5.45
7.....	5.55	5.75	8.3	7.7	6.8	8.65	7.15	7.5	6.55	6.0	5.6	5.4
8.....	5.5	5.75	7.8	7.8	6.9	8.45	7.1	7.3	6.55	6.0	5.6	5.4
9.....	5.5	5.6	8.2	7.8	6.9	8.2	7.1	7.2	6.5	5.95	5.6	5.4
10.....	5.5	5.6	8.4	7.8	6.9	7.8	7.15	7.4	6.45	5.95	5.6	5.4
11.....	5.45	5.65	8.4	7.0	6.9	7.55	7.15	7.45	6.5	5.9	5.6	5.4
12.....	5.45	5.6	8.4	6.85	6.85	7.6	7.15	7.5	6.45	5.9	5.6	5.4
13.....	5.4	5.5	8.4	6.8	6.9	7.5	7.15	7.6	6.5	5.9	5.6	5.45
14.....	5.4	5.3	8.2	6.8	6.95	7.5	7.15	7.6	6.45	5.85	5.6	5.45
15.....	5.4	5.6	8.05	6.8	7.0	7.5	7.15	7.5	6.4	5.85	5.55	5.45
16.....	5.4	5.7	7.9	6.75	6.9	7.55	7.1	7.4	6.4	5.85	5.55	5.45
17.....	5.35	5.6	7.75	6.7	6.8	7.55	7.1	7.3	6.4	5.85	5.55	5.45
18.....	5.35	5.7	7.6	6.75	6.9	7.6	7.1	7.25	6.4	5.8	5.55	5.45
19.....	5.4	5.8	7.3	6.8	6.95	7.6	7.1	7.15	6.35	5.8	5.55	5.5
20.....	5.4	6.15	7.05	6.75	6.9	7.65	7.1	7.05	6.3	5.8	5.5	5.55
21.....	5.45	6.6	7.05	6.75	6.9	7.7	7.1	7.0	6.3	5.8	5.5	5.6
22.....	5.5	7.42	7.0	6.8	6.9	7.8	7.15	6.95	6.35	5.8	5.5	5.6
23.....	5.5	8.15	8.0	7.0	6.9	7.9	7.2	6.9	6.35	5.8	5.5	5.55
24.....	5.45	9.3	8.25	7.25	6.95	7.9	7.25	6.9	6.35	5.8	5.5	5.55
25.....	5.4	11.1	8.6	7.3	7.0	7.9	7.3	6.85	6.25	5.75	5.5	5.5
26.....	5.4	10.9	7.75	7.35	7.1	7.9	7.3	6.85	6.2	5.75	5.5	5.5
27.....	5.4	10.4	7.6	7.4	7.2	7.75	7.3	6.85	6.2	5.75	5.5	5.45
28.....	5.4	9.95	7.5	7.4	7.4	7.6	7.4	6.9	6.1	5.7	5.5	5.45
29.....	5.4	9.75	7.4	7.4	-----	7.45	7.45	6.9	6.1	5.7	5.5	5.45
30.....	5.4	9.5	7.2	7.3	-----	7.4	7.5	6.85	6.1	5.7	5.5	5.4
31.....	5.5	-----	7.05	7.3	-----	7.3	-----	6.8	-----	5.7	5.5	-----

NOTE.—Ice present Jan. 1 to Mar. 22, 1906; Nov. 23 to Dec. 8, 1906; Jan. 6 to Feb. 9, 1907; Dec. 13, 1908, to about Feb. 19, 1909; Dec. 6-26, 1909; and during most of January and February, 1910.

Daily discharge, in second-feet, of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.						294	317	272	262	196	125	93
2.						294	317	283	262	180	125	93
3.						294	317	294	283	180	125	93
4.						305	317	305	294	173	115	89
5.						305	305	283	283	173	115	89
6.						305	305	272	283	166	115	89
7.						305	294	262	283	160	115	89
8.						305	294	283	272	160	115	89
9.						294	294	294	262	154	115	89
10.						283	291	305	262	147	115	89
11.						283	283	317	252	141	115	89
12.						283	262	317	252	141	115	89
13.						283	262	305	262	141	110	93
14.						283	262	283	242	141	106	93
15.						294	262	272	242	135	106	93
16.						305	272	283	232	135	106	93
17.						262	305	272	262	232	135	106
18.						266	305	272	262	223	135	106
19.						283	305	272	262	223	135	106
20.						355	317	262	262	223	130	102
21.						368	342	262	262	214	125	102
22.						329	368	252	272	205	125	97
23.						342	368	252	272	205	125	97
24.						283	355	242	262	205	125	97
25.						305	355	242	252	214	125	97
26.						305	368	242	272	205	120	97
27.						294	368	242	262	223	115	97
28.						283	382	212	272	214	115	97
29.						368	252	272	205	115	93	93
30.						342	262	272	205	115	93	97
31.						317	262	262	205	115	93	97
1905-6.												
1.	102	102	97	125	160	115	147	439	342	294	135	106
2.	106	97	97	120	160	106	147	410	329	283	135	102
3.	97	93	97	120	160	110	154	410	355	262	135	102
4.	97	93	97	120	135	106	147	410	342	262	135	102
5.	97	93	89	130	130	110	160	424	329	272	135	102
6.	97	89	89	135	125	106	180	439	396	272	130	102
7.	102	89	86	135	125	106	205	454	439	272	130	102
8.	106	89	102	135	130	115	223	468	439	272	130	102
9.	115	89	82	135	125	110	232	483	454	272	125	106
10.	115	89	89	135	120	106	242	483	468	262	125	106
11.	106	89	89	147	115	120	252	483	483	242	125	110
12.	106	89	89	147	110	154	252	483	439	242	135	110
13.	102	89	89	147	101	166	242	498	424	242	130	115
14.	102	82	89	147	97	135	252	513	396	242	125	115
15.	102	79	93	147	101	135	272	544	396	232	125	120
16.	106	82	97	166	101	135	305	544	396	232	125	115
17.	106	89	97	166	97	141	342	544	396	223	120	115
18.	110	89	97	173	101	135	388	559	396	223	115	115
19.	106	97	102	160	154	135	410	544	382	223	115	115
20.	106	97	106	180	125	135	410	468	368	196	115	110
21.	106	97	115	188	115	135	424	424	355	196	115	106
22.	106	89	106	196	120	141	454	382	329	180	115	106
23.	102	89	93	196	125	160	492	368	317	173	120	106
24.	102	89	102	196	130	147	522	342	305	166	115	106
25.	102	89	102	223	125	166	544	342	294	166	115	106
26.	102	89	110	223	115	160	544	329	305	160	115	106
27.	102	97	115	223	115	147	544	329	305	154	110	106
28.	102	97	115	223	125	160	513	382	294	154	110	106
29.	102	89	115	223	.....	160	498	396	294	154	106	106
30.	102	89	115	188	.....	173	468	439	294	147	106	106
31.	102	.....	115	188	.....	180	.....	454	.....	141	106	.....

Daily discharge, in second-feet, of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	102	97	130	115	329	439	305	770	591	410	252	223
2.....	102	97	120	115	368	410	317	770	591	396	252	223
3.....	102	97	125	160	410	382	317	751	591	396	252	223
4.....	102	97	130	223	468	355	305	713	608	396	242	214
5.....	102	106	130	329	608	342	294	694	624	396	232	223
6.....	102	115	125	294	732	329	317	676	641	382	232	223
7.....	102	115	125	283	751	329	355	658	658	368	232	223
8.....	102	120	130	283	770	329	382	641	676	368	232	205
9.....	97	141	130	272	1,450	329	439	624	676	368	232	205
10.....	97	154	125	242	1,890	329	498	641	676	368	242	205
11.....	97	147	125	242	1,650	329	544	658	676	368	252	196
12.....	102	141	160	232	1,430	305	575	658	658	368	242	188
13.....	102	89	125	232	1,320	283	608	676	641	355	232	188
14.....	106	141	115	214	1,300	272	641	694	624	355	232	188
15.....	106	141	130	188	1,070	262	658	713	624	342	232	188
16.....	106	154	125	205	990	242	641	713	624	329	223	188
17.....	115	188	120	196	950	262	641	694	608	329	214	196
18.....	115	188	125	196	732	329	658	658	591	305	214	196
19.....	115	188	130	214	575	396	676	621	544	305	214	196
20.....	110	180	135	223	544	483	676	624	513	294	214	196
21.....	106	180	154	214	513	498	694	658	468	294	205	188
22.....	106	173	166	205	513	513	694	713	439	294	205	188
23.....	102	160	160	188	513	483	694	751	439	294	205	188
24.....	102	130	154	188	468	355	713	790	439	272	214	180
25.....	102	130	166	196	468	355	713	810	439	272	223	173
26.....	97	130	180	205	454	329	732	810	439	272	232	173
27.....	97	130	188	205	468	305	732	770	410	272	223	173
28.....	97	130	205	214	468	294	751	713	410	272	214	180
29.....	97	130	188	223	283	283	770	658	410	262	214	180
30.....	97	130	173	242	272	272	770	641	410	262	214	180
31.....	97	-----	173	272	-----	272	-----	608	-----	252	205	-----
1907-8.												
1.....	173	160	196	520	-----	176	242	592	294	294	166	130
2.....	173	160	180	520	-----	173	232	468	294	294	166	125
3.....	173	160	160	485	-----	166	223	436	294	294	160	120
4.....	173	160	160	452	-----	166	232	485	294	283	160	120
5.....	173	160	160	-----	-----	166	223	502	283	283	154	120
6.....	166	154	166	-----	-----	154	232	502	262	283	154	120
7.....	166	154	166	-----	-----	154	242	502	262	283	154	120
8.....	166	147	173	-----	-----	154	242	502	272	272	154	120
9.....	160	147	173	-----	-----	154	242	485	283	272	154	120
10.....	160	147	173	-----	-----	160	262	485	283	272	141	120
11.....	160	147	180	-----	-----	166	283	468	305	262	135	120
12.....	160	147	205	-----	-----	180	305	456	340	252	135	120
13.....	160	147	188	-----	-----	405	328	456	352	272	135	120
14.....	160	147	173	-----	-----	223	352	456	365	283	141	120
15.....	160	147	188	-----	-----	283	378	468	378	294	141	120
16.....	160	147	205	-----	-----	352	405	485	365	283	141	125
17.....	160	147	223	-----	-----	420	420	485	365	262	135	125
18.....	154	141	205	-----	-----	485	436	436	392	262	130	125
19.....	154	141	196	-----	-----	452	452	405	392	252	130	141
20.....	154	147	196	-----	-----	392	468	392	420	232	130	125
21.....	154	154	196	-----	-----	340	502	378	420	232	130	242
22.....	154	160	317	-----	-----	316	520	352	436	252	130	242
23.....	154	160	368	-----	-----	316	555	340	452	262	130	242
24.....	154	166	454	-----	-----	316	610	328	436	242	125	125
25.....	154	166	591	-----	-----	340	629	305	365	232	125	125
26.....	154	173	624	-----	-----	352	668	305	340	223	125	130
27.....	154	173	624	-----	-----	340	687	294	328	205	125	166
28.....	154	180	591	-----	-----	294	668	283	305	205	125	166
29.....	160	180	528	-----	-----	272	610	283	294	188	125	166
30.....	160	188	468	-----	-----	262	555	283	294	180	130	166
31.....	160	-----	468	-----	-----	262	-----	294	-----	180	130	-----

Daily discharge, in second-feet, of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910—Continued

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	120	188	196	.....	.....	232	205	513	468	317	188	141
2.....	120	188	188	.....	.....	242	214	528	483	329	188	154
3.....	125	180	188	.....	.....	262	223	528	483	317	180	166
4.....	125	173	180	.....	.....	242	262	528	468	317	180	166
5.....	125	166	173	.....	.....	232	272	513	483	305	180	166
6.....	120	160	160	.....	.....	214	242	513	513	305	173	160
7.....	120	166	166	.....	.....	205	223	513	544	317	173	160
8.....	115	160	180	.....	.....	188	223	528	559	329	166	154
9.....	115	160	166	.....	.....	180	232	559	575	329	166	147
10.....	115	154	166	.....	.....	173	252	559	575	317	166	147
11.....	120	154	173	.....	.....	173	283	544	559	305	166	147
12.....	120	154	166	.....	.....	173	294	544	528	305	160	147
13.....	120	154	180	.....	.....	173	283	544	498	305	160	147
14.....	154	154	166	.....	.....	180	329	528	483	283	160	147
15.....	214	154	166	.....	.....	188	368	513	483	272	160	147
16.....	305	154	166	.....	.....	205	396	498	498	262	160	147
17.....	340	154	180	.....	.....	223	410	468	513	212	160	135
18.....	305	154	180	.....	.....	223	439	439	528	242	154	135
19.....	272	160	180	.....	.....	232	454	410	575	242	154	135
20.....	242	173	173	.....	.....	196	468	396	575	232	154	135
21.....	223	196	173	.....	.....	180	454	368	544	232	154	130
22.....	205	252	173	.....	.....	173	468	368	498	232	147	130
23.....	188	262	180	.....	.....	173	454	355	468	223	147	130
24.....	180	252	180	.....	.....	180	439	355	439	214	147	130
25.....	180	232	180	.....	.....	188	439	342	410	214	147	130
26.....	173	214	173	.....	.....	196	439	329	396	205	147	130
27.....	166	180	180	.....	.....	205	454	342	382	205	147	135
28.....	166	166	196	.....	.....	214	468	355	382	205	147	135
29.....	166	180	214	.....	.....	223	468	382	368	196	141	135
30.....	173	205	214	.....	.....	214	498	410	355	196	141	135
31.....	173	.....	214	.....	.....	205	.....	439	.....	196	141	.....
1909-10.												
1.....	135	154	1,310	.....	.....	694	513	608	368	214	154	135
2.....	135	160	1,260	.....	.....	790	528	624	355	214	154	135
3.....	135	166	1,170	.....	.....	810	528	658	355	214	154	130
4.....	135	180	1,050	.....	.....	930	528	658	342	223	154	130
5.....	141	173	970	.....	.....	970	528	641	342	223	147	130
6.....	141	166	890	.....	.....	1,010	513	624	329	214	147	130
7.....	141	166	890	.....	.....	1,030	483	591	317	205	147	125
8.....	135	166	694	.....	.....	950	468	528	317	205	147	125
9.....	135	147	850	.....	.....	850	468	498	305	196	147	125
10.....	135	147	930	.....	.....	694	483	559	294	196	147	125
11.....	130	154	930	.....	.....	608	483	575	305	188	147	125
12.....	130	147	930	.....	.....	624	483	591	294	188	147	125
13.....	125	135	930	.....	.....	591	483	624	305	188	147	130
14.....	125	115	850	.....	.....	591	483	624	294	180	147	130
15.....	125	147	790	.....	.....	591	483	591	283	180	141	130
16.....	125	160	732	.....	.....	608	468	559	283	180	141	130
17.....	120	147	676	.....	.....	608	468	528	283	180	141	130
18.....	120	160	624	.....	.....	624	468	513	283	173	141	130
19.....	125	173	528	.....	.....	624	468	483	272	173	141	135
20.....	125	232	454	.....	.....	641	468	454	262	173	135	141
21.....	130	329	454	.....	.....	658	468	439	262	173	135	147
22.....	135	565	439	.....	.....	694	483	424	272	173	135	147
23.....	135	830	476	.....	.....	732	498	410	272	173	135	141
24.....	130	1,300	513	.....	.....	732	513	410	272	173	135	141
25.....	125	2,150	550	.....	.....	732	528	396	252	166	135	135
26.....	125	2,050	587	.....	.....	732	528	396	242	166	135	135
27.....	125	1,800	624	.....	.....	676	528	396	242	166	135	130
28.....	125	1,580	591	.....	.....	624	559	410	223	160	135	130
29.....	125	1,490	559	.....	.....	575	575	410	223	160	135	130
30.....	125	1,380	498	.....	.....	559	591	396	223	160	135	125
31.....	135	.....	454	.....	.....	528	.....	382	.....	160	135	.....

NOTE.—Daily discharge determined as follows: 1905 to 1907, 1909, and 1910, from an average rating curve poorly defined; 1908, by indirect method for shifting channel. Discharge interpolated Dec. 23-26, 1909, on account of ice.

Monthly discharge of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
February 17-28.....	368	262	306	7, 280	B.
March.....	382	283	319	19, 600	B.
April.....	317	242	274	16, 300	B.
May.....	317	252	278	17, 100	B.
June.....	294	205	241	14, 300	B.
July.....	196	115	141	8, 670	C.
August.....	125	93	107	6, 580	C.
September.....	97	89	90.9	5, 410	C.
The period.....				95, 200	
1905-6.					
October.....	115	97	100	6, 150	C.
November.....	102	79	90.6	5, 390	B.
December.....	115	82	99.2	6, 100	B.
January.....	223	120	166	10, 200	D.
February.....	160	97	123	6, 830	C.
March.....	180	106	136	8, 360	C.
April.....	544	147	332	19, 800	C.
May.....	559	329	445	27, 400	B.
June.....	483	294	369	22, 000	C.
July.....	294	141	220	13, 500	B.
August.....	135	106	122	7, 500	C.
September.....	120	102	108	6, 430	C.
The year.....	559	79	193	140, 000	
1906-7.					
October.....	115	97	103	6, 330	C.
November.....	188	89	137	8, 150	C.
December.....	205	115	144	8, 850	B.
January.....	329	115	220	13, 500	D.
February.....	1, 890	329	793	44, 000	C.
March.....	513	242	345	21, 200	B.
April.....	770	294	570	33, 900	B.
May.....	810	608	696	42, 800	B.
June.....	676	410	558	33, 200	C.
July.....	410	252	330	20, 300	C.
August.....	252	205	227	14, 000	D.
September.....	223	173	196	11, 700	D.
The year.....	1, 890	89	356	258, 000	
1907-8.					
October.....	173	154	161	9, 900	D.
November.....	188	141	157	9, 340	D.
December.....	624	160	287	17, 600	D.
January.....			^a 300	18, 400	D.
February.....			^a 170	9, 780	D.
March.....	485	154	271	16, 700	B.
April.....	687	223	407	24, 200	B.
May.....	592	283	416	25, 600	B.
June.....	452	262	339	20, 200	B.
July.....	294	180	254	15, 600	C.
August.....	166	125	139	8, 550	C.
September.....	242	120	141	8, 390	C.
The year.....	687		254	184, 000	
1908-9.					
October.....	340	115	174	10, 700	B.
November.....	262	154	180	10, 700	B.
December.....	214	160	180	11, 100	C.
January.....			^a 150	9, 220	D.
February.....			^a 200	11, 100	D.
March.....	262	173	203	12, 500	C.
April.....	498	205	355	21, 100	C.
May.....	559	329	458	28, 200	C.
June.....	575	355	488	29, 000	C.
July.....	329	196	264	16, 200	C.
August.....	188	141	160	9, 840	C.
September.....	166	130	143	8, 510	C.
The year.....	575		246	178, 000	

^a Estimated.

Monthly discharge of East Fork at Allen's ranch, near Lava, Oreg., for 1905-1910—Con.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	141	120	130	7,990	C.
November.....	2,150	115	556	33,100	C.
December.....	1,310	439	748	46,000	D.
January.....			^a 350	21,500	D.
February.....			^a 350	19,400	D.
March.....	1,030	528	712	43,800	C.
April.....	591	468	502	29,900	C.
May.....	658	382	516	31,700	C.
June.....	368	223	289	17,200	C.
July.....	223	160	185	11,400	D.
August.....	154	135	142	8,730	D.
September.....	147	125	132	7,860	D.
The year.....	2,150	115	385	279,000	

^a Estimated.

TUMALO CREEK ABOVE WIMER CANAL, NEAR LAIDLAW, OREG.

Location.—In sec. 3, T. 18 S., R. 10 E., 300 feet above the intake of Wimer canal, about 1½ miles above the intake of Columbia Southern canal, and 15 miles from Laidlaw; above all diversions.

Records available.—April 1, 1908, to September 30, 1910, irrigation season only; records during winter kept at lower station near Bend.

Drainage area.—48 square miles.

Gage.—Vertical staff; present gage installed April 20, 1910, near site of gage used in 1908 and 1909, but at different datum.

Channel.—Gravel and large rocks; practically permanent.

Discharge measurements.—Made from a foot log or by wading.

Winter flow.—Practically no records during winter period.

Accuracy.—Results good.

Cooperation.—Station maintained in cooperation with Columbia Southern Irrigation Co.

Discharge measurements of Tumalo Creek above Wimer canal, near Laidlaw, Oreg., in 1908-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1909.		<i>Feet</i>	<i>Sec.-ft.</i>
Apr. 1	H. D. McGlashan.....	2.25	92	May 29	R. B. Post.....	2.96	208
June 16	J. H. Lewis.....	3.20	288	Aug. 1	.....do.....	2.40	108
June 23	H. D. McGlashan.....	2.78	176				
Dec. 31	R. B. Post.....	2.12	74	1910.			
				Apr. 20	L. R. Allen.....	3.95	178
1909.				June 22	.....do.....	3.70	119
Apr. 19	R. B. Post.....	2.41	98	Sept. 17	Allen and Davenport...	3.49	77

Daily gage height, in feet, of Tumalo Creek above Wimer canal near Laidlaw, Oreg., for 1908-1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1908.							
1.....	2.25	2.75	2.85	3.3	2.4	2.2	2.2
2.....	2.25	2.7	2.8	3.5	2.35	2.2	2.2
3.....	2.25	2.65	2.75	3.4	2.35	2.2	2.2
4.....	2.27	2.6	2.75	3.35	2.3	2.2	2.2
5.....	2.27	2.75	2.8	3.35	2.3	2.2	2.2
6.....	2.2	2.85	3.0	3.3	2.25	2.2	2.2
7.....	2.25	2.85	3.2	3.25	2.25	2.2	2.2
8.....	2.25	2.75	3.3	3.5	2.25	2.2	2.2
9.....	2.25	2.7	3.3	3.45	2.25	2.2	2.2
10.....	2.35	2.75	3.4	3.3	2.25	2.2	2.2
11.....	2.4	2.65	3.6	3.25	2.25	2.2	2.2
12.....	2.4	2.65	3.55	3.35	2.25	2.2	2.2
13.....	2.4	2.6	3.6	3.3	2.25	2.2	2.45
14.....	2.4	2.6	3.65	3.35	2.25	2.2	2.8
15.....	2.55	2.55	3.65	3.0	2.25	2.2	2.4
16.....	2.55	2.5	3.2	3.1	2.25	2.2	2.4
17.....	2.55	2.5	3.3	3.15	2.25	2.2	2.3
18.....	2.55	2.5	3.25	3.1	2.25	2.2	2.3
19.....	2.9	2.5	3.0	3.0	2.25	2.2	2.3
20.....	2.85	2.45	3.0	3.0	2.25	2.2	2.25
21.....	2.8	2.55	2.9	3.1	2.25	2.2	2.25
22.....	2.75	2.55	2.85	2.9	2.25	2.2	2.25
23.....	2.7	2.65	2.8	2.85	2.25	2.2	2.25
24.....	2.65	2.65	3.2	2.8	2.15	2.2	2.25
25.....	2.6	2.75	3.35	2.8	2.15	2.2	2.25
26.....	2.6	2.7	3.1	2.7	2.15	2.2	2.25
27.....	2.6	2.75	3.1	2.6	2.2	2.2	2.25
28.....	2.6	2.8	3.05	2.4	2.25	2.2	2.3
29.....	2.65	2.85	3.2	2.45	2.2	2.2	2.3
30.....	2.7	2.85	3.15	2.75	2.2	2.2	2.4
31.....		2.85		2.80	2.2		2.3

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1909.										
1.....	2.12	2.15	2.13			3.45	2.88	2.40	2.20	2.18
2.....	2.13	2.15	2.12			3.67	2.90	2.37	2.47	
3.....	2.15	2.15	2.12				3.03	2.35		2.18
4.....	2.12	2.16	2.12			3.40	2.95	2.35	2.25	
5.....	2.06	2.12	2.12			3.35		2.33	2.23	2.18
6.....	2.10	2.14	2.12		2.70		2.78	2.30	2.21	2.25
7.....	2.15	2.14	2.12		2.75	3.15		2.27	2.20	2.18
8.....	2.13	2.13	2.10		2.77	3.08	2.75	2.26	2.20	2.16
9.....	2.10	2.13	2.10			3.08	2.74	2.27	2.19	2.16
10.....	2.10	2.13	2.10			3.14	2.83	2.31	2.23	2.17
11.....	2.05	2.13	2.10		2.95	3.07	2.98	2.29	2.18	2.18
12.....	2.04	2.13	2.12		2.60	3.17	2.87	2.29	2.17	2.17
13.....	2.15	2.13	2.12		2.58	3.13		2.27	2.15	2.15
14.....	2.13	2.12	2.12		2.58	3.28	2.79	2.27	2.16	2.16
15.....	2.16	2.12	2.12				2.67	2.25	2.17	2.15
16.....	2.18	2.14	2.13		2.65	3.15	2.66	2.23	2.16	2.15
17.....	2.20	2.20	2.15		2.63	3.16	2.60	2.25	2.18	2.15
18.....	2.18	2.18	2.13		2.65	3.05	2.50	2.24	2.16	2.17
19.....	2.20	2.16	2.14		2.68	3.05	2.48	2.25	2.15	
20.....	2.25	2.16	2.13				2.49	2.27	2.16	2.16
21.....	2.28	2.14	2.13			3.05	2.50	2.25	2.17	2.16
22.....	2.20	2.12	2.13			3.03	2.55	2.22		2.16
23.....	2.20	2.14	2.13		2.63	3.15	2.57	2.21		2.15
24.....	2.20	2.15	2.13		2.66	3.05	2.53	2.20	2.16	2.15
25.....	2.18	2.14	2.13		2.76		2.55	2.20	2.17	2.15
26.....	2.18	2.14	2.15		2.90	3.12	2.50	2.27	2.18	2.15
27.....	2.18	2.14	2.17		3.05	3.00	2.40	2.25	2.18	2.15
28.....	2.18	2.13	2.17		2.97	2.88	2.40	2.20	2.18	2.15
29.....	2.18		2.16			2.85	2.38	2.20	2.20	2.16
30.....	2.18		2.15		3.20	2.88	2.41	2.20		2.15
31.....	2.16		2.14		3.10		2.43	2.19		

Daily gage height, in feet, of Tumalo Creek above Wimer canal near Laidlaw, Oreg., for 1908-1910—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1910.							1910.						
1		3.88	4.22	3.70	3.51	3.49	16		3.94	4.12	3.60	3.49	
2			4.08	3.70	3.51	3.49	17		3.93	3.88	3.59	3.49	3.49
3		3.85	4.00	3.65	3.51	3.49	18		4.00	3.88	3.59	3.49	
4		3.80	3.95	3.63	3.51	3.49	19		4.00	3.89	3.59	3.50	
5		3.78	4.09	3.65	3.51	3.49	20	3.96	3.95	3.78	3.60	3.50	3.59
6		3.79	3.95	3.78	3.50	3.49	21	3.90	3.98	3.70	3.59	3.50	
7		3.88	3.91	3.68	3.51	3.48	22	3.93	4.00	3.70	3.59	3.50	
8		4.11	3.85	3.68	3.50	3.48	23	4.00	4.09	3.66	3.60	3.50	3.49
9		4.11	3.85	3.80	3.51	3.48	24	4.10	4.20	3.67	3.58	3.49	
10		4.22	3.91	3.70	3.50	3.48	25		4.15	3.70	3.57	3.49	
11		4.10	4.21	3.70	3.51	3.48	26	4.29	4.10	3.72	3.56	3.49	
12		4.12	4.00	3.68	3.50		27	4.11	4.09	3.72	3.55	3.49	
13		4.08	3.95	3.64	3.50		28	4.09	3.99	3.71	3.54	3.49	
14		4.05	3.87	3.62	3.50		29	4.00	4.12	3.70	3.54	3.48	
15		4.00	3.87	3.60	3.50		30	3.92	4.15	3.70	3.53	3.48	
							31		4.20		3.52	3.48	

NOTE.—Discharge relation at this station apparently not affected by ice.

Daily discharge, in second-feet, of Tumalo Creek above Wimer canal, near Laidlaw, Oreg., for 1908-1910.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1908.										
1				90	170	192	323	110	84	84
2				90	160	180	400	103	84	84
3				90	151	170	360	103	84	84
4				92	142	170	342	96	84	84
5				92	170	180	342	96	84	84
6				84	192	230	323	90	84	84
7				90	192	290	306	90	84	84
8				90	170	323	400	90	84	84
9				90	160	323	380	90	84	84
10				103	170	300	323	90	84	84
11				110	151	440	306	90	84	84
12				110	151	420	342	90	84	84
13				110	142	440	323	90	84	118
14				110	142	462	342	90	84	180
15				134	134	462	230	90	84	110
16				134	125	290	259	90	84	110
17				134	125	323	274	90	84	96
18				134	125	306	259	90	84	96
19				203	125	230	230	90	84	96
20				192	118	230	230	90	84	90
21				180	134	203	259	90	84	90
22				170	134	192	203	90	84	90
23				160	151	180	192	90	84	90
24				151	151	290	180	80	84	90
25				142	170	342	180	80	84	90
26				142	160	259	160	80	84	90
27				142	170	259	142	84	84	90
28				142	180	244	110	90	84	96
29				151	192	290	118	84	84	96
30				160	192	274	170	84	84	110
31					192		180	84		96

Daily discharge, in second-feet, of Tumalo Creek above Wimer canal, near Laidlaw, Oreg., for 1908-1910—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1909.										
1	75	78	76	.....	150	362	191	108	83	81
2	76	78	75	.....	150	440	195	104	118	81
3	78	78	75	.....	150	392	226	102	104	81
4	75	79	75	.....	150	345	206	102	89	81
5	69	75	75	.....	150	328	188	99	87	81
6	73	77	75	.....	155	295	170	95	84	89
7	78	77	75	.....	164	262	167	91	83	81
8	76	76	73	.....	168	240	164	90	83	79
9	73	76	73	.....	181	240	163	91	82	79
10	73	76	73	.....	193	258	180	96	87	80
11	68	76	73	.....	206	238	213	94	81	81
12	68	76	75	.....	137	268	189	94	80	80
13	78	76	75	.....	134	255	180	91	78	78
14	76	75	75	.....	134	303	172	91	79	78
15	79	75	75	.....	140	282	150	89	80	78
16	81	77	76	.....	146	262	148	87	79	78
17	83	83	78	.....	142	265	137	89	81	78
18	81	81	76	.....	146	232	122	88	79	80
19	83	79	77	.....	151	232	119	89	78	80
20	89	79	76	.....	149	232	121	91	79	79
21	93	77	76	.....	146	232	122	89	80	79
22	83	75	76	.....	144	226	130	85	80	79
23	83	77	76	.....	142	262	132	84	79	78
24	83	78	76	.....	148	232	126	83	79	78
25	81	77	76	.....	166	242	130	83	80	78
26	81	77	78	.....	195	252	122	91	81	78
27	81	77	80	.....	232	218	108	89	81	78
28	81	76	80	.....	211	191	108	83	81	78
29	81	.....	79	.....	244	184	105	83	83	78
30	81	.....	78	.....	277	191	109	83	82	78
31	79	.....	77	.....	246	.....	112	82	.....	78
1910.										
1	.....	.....	.....	.....	161	249	119	81	78	.....
2	.....	.....	.....	.....	158	212	119	81	78	.....
3	.....	.....	.....	.....	154	191	108	81	78	.....
4	.....	.....	.....	.....	142	178	104	81	78	.....
5	.....	.....	.....	.....	136	214	108	81	78	.....
6	.....	.....	.....	.....	140	178	137	79	78	.....
7	.....	.....	.....	.....	161	168	115	81	76	.....
8	.....	.....	.....	.....	220	154	115	79	76	.....
9	.....	.....	.....	.....	220	154	142	81	76	.....
10	.....	.....	.....	.....	249	168	119	79	76	.....
11	.....	.....	.....	.....	217	247	119	81	76	.....
12	.....	.....	.....	.....	222	191	115	79	.....	.....
13	.....	.....	.....	.....	212	178	106	79	.....	.....
14	.....	.....	.....	.....	204	159	102	79	.....	.....
15	.....	.....	.....	.....	191	159	98	79	.....	.....
16	.....	.....	.....	.....	176	222	98	78	.....	.....
17	.....	.....	.....	.....	174	161	96	78	78	.....
18	.....	.....	.....	.....	191	161	96	78	.....	.....
19	.....	.....	.....	.....	191	164	96	79	.....	.....
20	.....	.....	.....	.....	181	178	138	79	96	.....
21	.....	.....	.....	.....	166	186	119	96	79	.....
22	.....	.....	.....	.....	174	191	119	96	79	.....
23	.....	.....	.....	.....	191	214	111	98	79	78
24	.....	.....	.....	.....	217	244	112	94	78	.....
25	.....	.....	.....	.....	244	230	119	92	78	.....
26	.....	.....	.....	.....	268	217	124	90	78	.....
27	.....	.....	.....	.....	220	214	124	88	78	.....
28	.....	.....	.....	.....	214	188	121	87	78	.....
29	.....	.....	.....	.....	191	222	119	87	76	.....
30	.....	.....	.....	.....	171	230	119	85	76	.....
31	.....	.....	.....	.....	.....	244	.....	83	76	.....

NOTE.—Daily discharge for 1908 and 1909 determined from rating curves well defined between 75 and 300 second-feet, and for 1910 from curve well defined between 70 and 180 second-feet. Discharge May 1-5, 1909, estimated.

Monthly discharge of Tumalo Creek above Wimer canal, near Laidlaw, Oreg., for 1906-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
May 15-31.....	450	140	218	7,350	B.
June.....	393	136	244	14,500	B.
July.....	424	103	210	12,900	B.
August.....	91	78	82	5,040	C.
September.....	108	78	79.9	4,910	C.
The period.....				44,700	
1906-7.					
October.....	237	80	102	6,270	B.
November.....	820	118	242	14,400	C.
December.....	182	109	145	8,920	B.
January.....			a 120	7,380	C.
February.....	442	128	206	11,400	B.
March.....	182	128	151	9,280	B.
April.....	166	109	141	8,390	B.
May.....	438	166	271	16,700	A.
June.....	457	162	313	18,600	B.
July.....	386	151	265	16,300	B.
August.....	189	90	112	6,890	B.
September.....	111	88	98.4	5,860	B.
The year.....	820	80	180	130,000	
1907-8.					
October.....	100	84	89	5,470	B.
November.....	86	62	74.5	4,430	B.
December.....	142	62	86	5,290	B.
January.....	152	78	90.1	5,540	C.
February.....	163	70	97.8	5,630	C.
March.....	132	b 62	88.5	5,440	B.
April.....	203	84	127	7,560	A.
May.....	192	118	156	9,590	A.
June.....	462	170	285	17,600	A.
July.....	400	118	264	16,200	A.
August.....	110	84	90.1	5,540	A.
September.....	84	84	84	5,000	A.
The year.....	462	62	128	92,700	
1908-9.					
October.....	180	84	94.6	5,820	A.
November.....	c 98	c 50	c 80.0	4,760	C.
December.....	78	62	69.7	4,290	C.
January.....	93	68	78.7	4,840	B.
February.....	83	75	77.2	4,290	B.
March.....	80	73	75.9	4,670	B.
April.....			d 91.1	5,420	C.
May.....	277	134	169	10,400	A.
June.....	440	184	265	15,800	A.
July.....	226	105	152	9,350	A.
August.....	108	82	90.8	5,580	A.
September.....	118	78	83.3	4,960	A.
The year.....	440	c 50	111	80,200	
1909-10.					
October.....	89	78	79.5	4,800	A.
November.....			e 243	14,500	C.
December.....			e 177	10,900	C.
January.....			e 115	7,070	C.
February.....			e 97.4	5,410	C.
March.....			e 148	9,100	C.
April.....	268		e 188	11,200	B.
May.....	249	136	196	12,100	B.
June.....	249	111	161	9,580	B.
July.....	142	83	103	6,330	A.
August.....	81	76	79	4,860	A.
September.....			f 80	4,760	B.
The year.....			139	101,000	

a Estimated on account of ice obstruction.

b Probably too low on account of unrecorded diversions.

c Increased 20 second-feet to allow for unrecorded diversions, the minimum is probably still too low.

d Estimated.

e Estimated from comparison with records on Squaw Creek near Sisters.

f Estimated from occasional readings.

NOTE.—Monthly discharge estimated as follows: For the irrigating seasons 1906 and 1907, from the sum of the discharge at the station below Wimer canal and the canal; for 1909 and for the irrigating season 1910, from the record above Wimer canal; and for the nonirrigating season, from the records of the station near Bend, so far as available. Means estimated for months during which no records were obtained.

TUMALO CREEK BELOW WIMER CANAL, NEAR LAIDLAW, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 2, T. 18 S., R. 10 E., about half a mile above intake of Columbia Southern canal, and 15 miles from Laidlaw.

Records presented.—May 15, 1906, to October 31, 1907, irrigating season only; records during winter kept at lower station near Bend.

Drainage area.—48 square miles.

Gage.—Vertical staff.

Channel.—Gravel and large rocks; fairly permanent.

Discharge measurements.—Made from a foot log or by wading.

Winter flow.—No records during winter period.

Accuracy.—Results good.

Diversions.—Below intake of Wimer canal, discharge of which has been added to give the total for the creek; above all other diversions.

Cooperation.—Station maintained in cooperation with Columbia Southern Irrigation Co.

Discharge measurements of Tumalo Creek below Wimer Canal, near Laidlaw, Oreg., in 1906-1908.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1906.		<i>Fect.</i>	<i>Sec.-ft.</i>	1907.		<i>Fect.</i>	<i>Sec.-ft.</i>
May 15	I. Landes.....	2.19	218	Apr. 14	I. E. Oakes.....	1.80	120
June 9	.... do.....	1.85	144	19	W. P. Hardesty.....	1.80	118
16	L. R. Allen.....	2.23	236	May 3	....do.....	1.90	142
18	Stevens and Landes.....	2.08	202				
Aug. 13	C. W. Allen.....	1.55	71	1908.			
				Apr. 1	H. D. McGlashan.....	1.60	69

Daily gage height, in feet, of Tumalo Creek below Wimer Canal, near Laidlaw, Oreg., for 1906-7.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1906.							1906.						
1.....		1.85	2.50	1.55	1.50	1.50	16.....	2.90	2.45	1.75	1.50	1.50	1.65
2.....		2.10	2.65	1.55	1.50	1.65	17.....	2.20	2.30	1.65	1.50	1.50	1.55
3.....		2.25	2.60	1.50	1.50	1.60	18.....	2.40	2.35	1.55	1.50	1.50	1.55
4.....		2.15	2.70	1.50	1.50	1.60	19.....	2.50	2.40	1.65	1.50	1.50	1.52
5.....		1.95	2.60	1.50	1.50	1.55	20.....	2.00	2.45	1.70	1.50	1.50	1.52
6.....		1.90	2.45	1.50	1.50	1.52	21.....	1.95	2.25	1.70	1.50	1.50	1.50
7.....		1.80	2.45	1.50	1.50	1.52	22.....	1.90	2.20	1.65	1.50	1.50	1.50
8.....		1.85	2.40	1.55	1.50	1.52	23.....	1.92	2.20	1.65	1.50	1.50	1.50
9.....		1.85	2.20	1.55	1.50	1.50	24.....	2.00	2.18	1.60	1.50	1.50	1.50
10.....		1.80	2.15	1.55	1.50	1.65	25.....	2.50	2.60	1.60	1.50	1.50	1.55
11.....		2.10	2.15	1.55	1.50	1.85	26.....	1.95	2.40	1.60	1.50	1.50	2.15
12.....		2.15	2.10	1.55	1.50	1.70	27.....	1.90	2.10	1.60	1.50	1.50	1.65
13.....		2.10	2.10	1.55	1.62	1.70	28.....	1.95	1.90	1.60	1.50	1.50	1.60
14.....		2.00	1.95	1.55	1.58	1.67	29.....	1.85	2.05	1.60	1.50	1.50	1.55
15.....	2.19	2.55	1.85	1.55	1.50	1.80	30.....	1.80	2.20	1.60	1.50	1.50	1.55
							31.....	1.80	.....	1.60	1.50	.....	1.55

Daily gage height, in feet, of Tumalo Creek below Wimer Canal, near Laidlaw, Oreg., for 1906-7—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1907.							
1.....		1.95	2.85	2.45	1.95	1.65	1.6
2.....		1.95	2.85	2.45	1.8	1.6	1.6
3.....		1.9	2.8	2.65	1.75	1.6	1.55
4.....		1.9	2.65	2.5	1.7	1.6	1.55
5.....		2.0	2.75	2.4	1.7	1.6	1.55
6.....		2.05	2.65	2.4	1.65	1.65	1.55
7.....		2.05	2.85	2.35	1.6	1.65	1.55
8.....		2.15	1.9	2.45	1.75	1.65	1.55
9.....		2.2	1.9	2.55	1.65	1.6	1.55
10.....		2.2	2.4	2.55	1.55	1.6	1.55
11.....		2.2	2.35	2.5	1.55	1.6	1.55
12.....		2.1	2.3	2.5	1.65	1.6	1.55
13.....		2.05	2.3	2.25	1.65	1.6	1.55
14.....		2.25	2.1	2.15	1.6	1.6	1.55
15.....		2.35	2.5	2.2	1.6	1.6	1.55
16.....		2.45	2.0	2.2	1.6	1.6	1.65
17.....		2.55	2.1	2.25	1.6	1.6	1.65
18.....		2.65	2.3	2.0	1.55	1.6	1.6
19.....	1.8	2.45	2.55	2.25	1.55	1.55	1.55
20.....	1.8	2.35	2.5	2.25	1.55	1.55	1.55
21.....	1.8	2.3	2.3	2.25	1.55	1.55	1.55
22.....	1.85	2.2	2.1	2.1	1.55	1.55	1.55
23.....	1.9	2.2	2.1	2.0	1.55	1.55	1.55
24.....	1.9	2.2	2.3	2.0	1.7	1.6	1.55
25.....	1.9	2.3	2.35	2.0	1.65	1.6	1.55
26.....	1.9	2.4	2.5	2.0	1.65	1.6	1.55
27.....	1.9	2.3	2.6	1.9	1.65	1.6	1.6
28.....	1.9	2.5	2.5	1.85	1.65	1.6	1.55
29.....	1.85	2.6	2.5	1.8	1.6	1.6	1.6
30.....	1.85	2.7	2.55	1.95	1.6	1.6	1.55
31.....		2.8	.....	2.0	1.6	.....	1.55

Daily discharge, in second-feet, of Tumalo Creek below Wimer Canal, near Laidlaw, Oreg., for 1906-7.

Day.	April.	May.	June.	July.	Aug.	Sept.	Oct.
1906.							
1.....			140	314	73	62	62
2.....			202	359	73	62	95
3.....			242	344	62	62	84
4.....			215	374	62	62	84
5.....			164	344	62	62	73
6.....			152	299	62	62	66
7.....			128	299	62	62	66
8.....			140	284	73	62	66
9.....			140	228	73	62	62
10.....			128	215	73	62	95
11.....			202	215	73	62	140
12.....			215	202	73	62	106
13.....			202	202	73	88	106
14.....			176	164	73	80	99
15.....		225	329	140	73	62	128
16.....		438	299	117	62	62	95
17.....		228	256	95	62	62	73
18.....		284	270	73	62	62	73
19.....		314	284	95	62	62	66
20.....		176	299	106	62	62	66
21.....		164	242	106	62	62	62
22.....		152	228	95	62	62	62
23.....		157	228	95	62	62	62
24.....		176	223	84	62	62	62
25.....		314	344	84	62	62	73
26.....		164	284	84	62	62	215
27.....		152	202	84	62	62	95
28.....		164	152	84	62	62	84
29.....		140	189	84	62	62	73
30.....		128	228	84	62	62	73
31.....		128	.....	84	62	.....	73

Daily discharge, in second-feet, of Tumalo Creek below Wimer Canal, near Laidlaw, Oreg., for 1906-7—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1907.							
1.....	128	155	409	289	155	84	73
2.....	128	155	409	289	119	73	73
3.....	128	143	393	348	107	73	63
4.....	128	143	348	303	95	73	63
5.....	128	167	378	275	95	73	63
6.....	128	179	348	275	84	84	63
7.....	128	179	409	261	73	84	63
8.....	109	205	143	289	95	84	63
9.....	109	219	143	318	84	73	63
10.....	128	219	275	318	63	73	63
11.....	138	219	261	303	63	73	63
12.....	128	191	247	303	84	73	63
13.....	128	179	247	233	84	73	63
14.....	128	233	191	205	73	73	63
15.....	148	261	303	219	73	73	63
16.....	148	289	167	219	73	73	84
17.....	148	318	191	233	73	73	84
18.....	148	348	247	167	63	73	73
19.....	119	289	318	233	63	63	63
20.....	119	261	303	233	63	63	63
21.....	119	247	247	233	63	63	63
22.....	131	219	191	191	63	63	63
23.....	143	219	191	167	63	63	63
24.....	143	219	247	167	95	73	63
25.....	143	247	261	167	84	73	63
26.....	143	275	303	167	84	73	63
27.....	143	247	333	143	84	73	73
28.....	143	303	303	131	84	73	63
29.....	131	333	303	119	73	73	73
30.....	131	363	318	155	73	73	63
31.....		393		167	73		63

NOTE.—Daily discharge for 1906 and 1907 determined from two rating curves well defined between 60 and 250 second-feet. Monthly discharge included in table for Tumalo Creek above Wimer canal near Laidlaw.

TUMALO CREEK NEAR BEND, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 23, T. 17 S., R. 11 E., at highway bridge on Bend-Sister road, 4 miles above mouth.

Records available.—October 6, 1906, to December 31, 1908 (fragmentary). Station maintained in winter months only to insure a year-long record on the stream; upper station somewhat isolated and sometimes inaccessible in winter.

Drainage area.—57 square miles.

Gage.—Vertical staff attached to abutment of bridge.

Channel.—Rocks and gravel; somewhat shifting.

Discharge measurements.—At ordinary stages made by wading; at flood stages made from the highway bridge.

Winter flow.—Discharge relation considerably affected by ice during extremely cold weather.

Diversions.—All the water of this stream diverted above station, making it dry during the irrigation season except for seepage return.

Accuracy.—Results fair.

Discharge measurements of Tumalo Creek near Bend, Oreg., in 1906-1908.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 13	Ivan Landes.....	1.23	53	May 4	W. P. Hardesty.....	1.55	108
Apr. 19	do.....	1.52	80				
Oct. 6	C. L. Swain.....	.40	a 8	1908.			
1907.				Apr. 1	H. D. McGlashan.....	1.30	46
Apr. 15	I. E. Oakes.....	1.50	148	June 23	do.....	1.37	62
				Oct. 24	R. B. Post.....	1.00	16

a Estimated.

Daily gage height, in feet, of Tumalo Creek near Bend, Oreg., for 1906-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....		1.4	1.6	1.9	1.4	1.55	1.4					
2.....		1.35	1.6	2.1	1.65	1.55	1.0					
3.....		1.4	1.5	2.1	1.75	1.5	1.05					
4.....		1.4	1.4	2.2	1.8	1.5	1.05					
5.....		1.4	1.45	2.1	2.5	1.5	1.1					
6.....	0.40	1.45	1.4	2.0	2.6	1.5	1.4					
7.....	.40	2.2	1.3	2.1	1.8	1.6	1.4					
8.....	.42	2.45	1.3	2.3	1.8	1.6	1.3					
9.....	.40	1.5	1.35	3.3	1.7	1.6	1.3					
10.....	.40	3.1	1.4	3.2	1.6	1.55	1.4					
11.....	.38	1.85	1.4	3.65	1.75	1.55	1.45					
12.....	.80	1.8	1.45	3.8	1.7	1.5	1.4					
13.....	.52	2.9	1.5	3.9	1.7	1.45	1.4					
14.....	.60	3.8	1.5	3.85	1.6	1.45	1.4					
15.....	.50	2.2	1.5	4.65	1.6	1.4	1.5					
16.....	.78	1.9	1.45	5.1	1.6	1.4	1.5					
17.....	.32	1.75	1.4	5.35	1.6	1.6	1.5					
18.....	.32	1.8	1.4	5.3	1.6	1.65	1.5					
19.....	.31	2.1	1.35	5.35	1.6	1.6	1.5					
20.....	.30	1.5	1.55	5.3	1.6	1.5	1.5					
21.....	.32	1.5	1.5	4.2	1.75	1.5	1.55					
22.....	.35	1.4	1.6	4.3	1.75	1.5	1.45					
23.....	.35	1.4	1.65	4.3	1.7	1.55	1.5					
24.....	.65	1.5	1.65	4.25	1.8	1.65						
25.....	.75	1.55	1.6	4.2	1.8	1.6						
26.....	2.00	1.6	1.6	3.3	1.8	1.5						
27.....	.95	1.7	1.5	3.35	1.7	1.4						
28.....	.80	1.75	1.5	1.35	1.6	1.4						
29.....	.75	2.0	1.5	1.3		1.4						
30.....	.75	1.9	1.45	1.3		1.4						
31.....	.80		1.6	1.45		1.4						

NOTE.—Rise Jan. 1-27, 1907, evidently caused by ice jam below gage.

Daily gage height, in feet, of Tumalo Creek near Bend, Oreg., for 1906-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....		1.45	1.5	1.6	1.95	1.5	1.3					
2.....		1.45	1.5	1.6	a2.7	1.5	1.4					
3.....		1.5	1.5	1.55	a3.5	1.55	1.4					
4.....		1.45	1.5	1.55	1.9	1.6	1.4					
5.....		1.45	1.55	1.5	1.5	1.7	1.4					
6.....		1.45	1.55	1.5	1.5	1.6	1.35					
7.....		1.45	1.5	1.5	1.45	1.5	1.4					
8.....		1.45	1.45	1.5	1.45	1.5	1.3					
9.....		1.45	1.45	1.55	1.5	1.45	1.35					
10.....		1.45	1.5	1.5	1.55	1.45	1.6					
11.....		1.4	1.5	1.5	1.7	1.5	1.7					
12.....		1.45	1.45	1.5	1.75	1.5	1.7					
13.....		1.5	1.45	1.5	1.8	1.5	1.7					
14.....		1.5	1.45	1.5	1.85	1.55						
15.....		1.5	1.45	1.5	1.9	1.75						
16.....		1.5	1.45	1.5	1.5	1.8						
17.....		1.5	1.45	1.5	1.5	1.8						
18.....		1.45	1.4	1.5	1.5	1.7						
19.....		1.45	1.4	1.55	1.45	1.65						
20.....		1.45	1.45	1.55	1.45	1.6						
21.....		1.45	1.5	1.6	1.5	1.6						
22.....		1.5	1.8	1.6	1.5	1.6						
23.....		1.5	1.85	1.55	1.5	1.6						
24.....		1.5	1.75	1.55	1.55	1.55						
25.....		1.5	1.75	1.5	1.55	1.55						
26.....		1.5	1.7	1.6	1.5	1.5						
27.....		1.55	1.65	1.65	1.5	1.5						
28.....		1.55	1.6	1.7	1.45	1.5						
29.....		1.55	1.6	1.75	1.5	1.45						
30.....		1.5	1.6	1.8		1.4						
31.....			1.6	1.9		1.4						

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1908.				1908.				1908.			
1.....		1.4	1.5	11.....		1.35	1.45	21.....		1.35	a3.3
2.....		1.4	1.45	12.....		1.4	1.45	22.....		1.3	a3.5
3.....		1.4	1.45	13.....		1.35	1.5	23.....		1.25	a2.2
4.....		1.45	1.4	14.....		1.35	1.5	24.....		1.15	a2.0
5.....		1.45	1.45	15.....		1.4	1.5	25.....		1.0	a1.8
6.....		1.45	1.5	16.....		1.4	1.5	26.....		.9	1.25
7.....		1.4	1.45	17.....		1.4	a1.7	27.....		.9	1.45
8.....		1.4	1.45	18.....		1.4	a2.3	28.....		1.0	1.5
9.....		1.4	1.4	19.....		1.45	a2.7	29.....		1.0	1.5
10.....		1.35	1.45	20.....		1.35	a3.0	30.....		1.0	1.5
								31.....		1.2	1.4

a Stream blocked with ice Feb. 2-3, 1908.

Daily discharge, in second-feet, of Tumalo Creek near Bend, Oreg., for 1906-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1906-7.							
1.....		128	170		128	159	128
2.....		118	170		182	159	58
3.....		128	148		204	148	64
4.....		128	128		216	148	64
5.....		128	138		412	148	74
6.....	8	138	128		442	148	128
7.....	8	324	109		216	170	128
8.....	9	397	109		216	170	109
9.....	8	148	118		193	170	109
10.....	8	596	128		170	159	128
11.....	7	229	128		204	159	138
12.....	35	216	138		193	148	128
13.....	13	534	148		193	138	128
14.....	18	820	148		170	138	128
15.....	12	324	148		170	128	148
16.....	33	242	138		170	128	148
17.....	6	204	128		170	170	148
18.....	6	216	128		170	182	148
19.....	5	296	118		170	170	148
20.....	5	148	159		170	148	148
21.....	6	148	148		204	148	159
22.....	6	128	170		204	148	138
23.....	6	128	182		193	159	148
24.....	22	148	182		216	182	
25.....	30	159	170		216	170	
26.....	269	170	170		216	148	
27.....	52	148	148		193	128	
28.....	35	204	148	118	170	128	
29.....	30	269	148	109		128	
30.....	30	242	138	109		128	
31.....	35		170	138		128	
1907-8.							
1.....		70	78	95	163	78	48
2.....		70	78	95	163	78	62
3.....		78	86	86	152	86	62
4.....		70	78	86	152	95	62
5.....		70	86	78	78	113	62
6.....		70	86	78	78	95	55
7.....		70	78	78	70	78	62
8.....		70	70	78	70	78	48
9.....		70	70	86	78	70	55
10.....		70	78	78	86	70	95
11.....		62	78	78	113	78	113
12.....		70	70	78	122	78	113
13.....		78	70	78	132	78	113
14.....		78	70	78	142	86	
15.....		78	70	78	152	122	
16.....		78	70	78	78	132	
17.....		78	70	78	78	132	
18.....		70	62	78	78	113	
19.....		70	62	86	70	104	
20.....		70	70	86	70	95	
21.....		70	78	95	78	95	
22.....		78	132	95	78	95	
23.....		78	142	86	78	95	
24.....		78	122	86	86	86	
25.....		78	121	78	86	86	
26.....		78	113	95	78	78	
27.....		86	104	104	78	78	
28.....		86	95	113	70	78	
29.....		86	95	122	78	70	
30.....		78	95	132		62	
31.....			95	152		62	

Daily discharge, in second-feet, of Tumalo Creek near Bend, Oreg., for 1906-1908—Contd.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1908-9.				1908-9.				1908-9.			
1.....		62	78	11.....		55	70	21.....		55	78
2.....		62	70	12.....		62	70	22.....		48	62
3.....		62	70	13.....		55	78	23.....		42	62
4.....		70	62	14.....		55	78	24.....		30	62
5.....		70	70	15.....		62	78	25.....	17	35	62
6.....		70	78	16.....		62	78	26.....	10	42	62
7.....		62	70	17.....		62	78	27.....	10	70	62
8.....		62	70	18.....		62	78	28.....	17	78	62
9.....		70	62	19.....		70	78	29.....	17	78	62
10.....		55	70	20.....		55	78	30.....	17	78	62
								31.....	35		

NOTE.—Daily discharge Oct. 6, 1906, to Apr. 23, 1907, determined from rating curves well defined below 150 second-feet; discharge Nov. 1, 1907, to Dec. 31, 1908, determined from curves well defined between 15 and 70 second-feet. Monthly discharge included in table for Tumalo Creek above Wimer canal near Laidlaw.

WIMER CANAL NEAR LAIDLAW, OREG.

Location.—In sec. 2, T. 18 S., R. 10 E., about 15 miles from Laidlaw, half a mile below the intake, and below controlling spillway.

Records available.—1906 to 1910. Those for 1906 and 1907 were just below intake and above controlling spillway.

Gage.—Vertical staff; no change in datum since April 1, 1908.

Channel.—Flume.

Discharge measurements.—Made by wading or from yoke of flume.

Winter flow.—Not operated during the season of ice.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by the Columbia Southern Irrigation Co.

Discharge measurements of Wimer canal near Laidlaw, Oreg., in 1906-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 15	Ivan Landes.....		12	June 23	H. D. McGlashan.....	0.78	8.3
June 9	do.....		8.5	23	do.....	1.20	19
16	L. R. Allen.....	1.90	41	23	do.....	1.40	24
18	Stevens and Landes....	1.85	43	24	do.....	1.48	26
1907.				1909.			
Apr. 14	I. E. Oakes.....	.90	22	Apr. 19	R. B. Post.....	.89	11
19	W. P. Hardesty.....	.90	17	May 28	do.....	1.10	16
May 3	do.....	.90	23	Aug. 1	do.....	1.60	31
1908.				1910.			
Apr. 1	H. D. McGlashan.....	.95	24	Apr. 20	L. R. Allen.....	.35	1.5
June 16	J. H. Lewis.....	1.30	18	June 22	do.....	1.38	21
23	H. D. McGlashan.....	.65	6	Sept. 17	Allen and Davenport...	.95	11.4

Daily gage height, in feet, of Wimer canal near Laidlaw, Oreg., for 1906-1910.

Day.	June.	July.	Aug.	Sept.	Oct.	Day.	June.	July.	Aug.	Sept.	Oct.
1906.						1906.					
1		2.05	1.00	0.88	1.00	16	1.98	1.55	0.88	0.88	1.62
2		2.10	1.00	.88	1.30	17	1.95	1.45	.88	.88	1.10
3		2.05	.95	.88	1.20	18	1.95	1.45	.88	.88	1.10
4		2.15	.95	.88	1.10	19	2.00	1.45	.88	.88	1.10
5		2.05	.95	.88	1.10	20	2.00	1.50	.88	.88	1.10
6		2.05	.95	.88	1.06	21	1.95	1.45	.88	.88	1.05
7		2.05	.95	.88	1.06	22	1.90	1.40	.88	.88	1.05
8		2.00	.95	.88	1.04	23	1.90	1.40	.88	.88	1.10
9		1.95	.95	.88	1.02	24	1.90	1.15	.88	.88	1.15
10		1.90	.95	.88	-----	25	2.10	1.05	.88	.88	1.20
11		1.90	.95	.88	-----	26	2.05	1.05	.88	.88	2.20
12		1.90	.95	1.28	-----	27	1.95	1.05	.88	.88	1.25
13		1.90	.95	1.08	-----	28	1.85	1.05	.88	.88	1.20
14		1.75	.95	.95	-----	29	1.90	1.05	.88	.88	1.20
15		1.65	.88	.88	-----	30	1.95	1.05	.88	.88	1.15
						31	-----	1.05	.88	-----	1.15

Day.	Apr.	May.	June	July.	Aug.	Sept.	Oct.
1907.							
1		0.95	1.8	1.35	1.35	1.0	1.0
2		.95	1.75	1.35	1.25	.95	1.1
3		.9	1.75	1.45	1.25	.95	1.1
4		.9	1.6	1.35	1.25	1.1	1.05
5		.95	1.7	1.3	1.25	1.1	1.05
6		1.0	1.6	1.3	1.3	1.1	1.05
7		1.05	1.3	1.3	1.3	1.1	1.1
8		1.15	1.0	1.35	1.35	1.1	1.1
9		1.2	1.0	1.5	1.25	1.05	1.1
10		1.2	1.4	1.5	1.25	1.05	1.1
11		1.2	1.3	1.45	1.25	1.05	1.1
12		1.1	.9	1.45	1.2	1.05	1.1
13		1.05	.9	1.35	1.2	1.05	1.1
14		1.25	.7	1.3	1.2	1.05	1.1
15		1.35	.65	1.3	1.2	1.05	1.1
16		1.45	.9	1.3	1.15	1.05	-----
17		1.55	1.0	1.3	1.3	1.05	-----
18		1.65	1.5	1.2	1.25	1.05	.8
19		.9	1.45	1.1	1.4	1.25	1.0
20		.9	1.35	1.2	1.4	1.25	1.0
21		.9	1.3	1.2	1.4	1.1	1.0
22		.95	1.2	1.1	1.25	1.1	1.0
23		.95	1.2	1.1	1.3	1.1	1.0
24		.9	1.2	1.2	1.3	1.2	1.0
25		.9	1.3	1.25	1.4	1.15	1.0
26		.9	1.4	1.35	1.4	1.1	1.0
27		.9	1.3	1.35	1.4	1.1	1.0
28		.9	1.45	1.2	1.3	1.1	1.0
29		.85	1.55	1.2	1.25	1.1	1.0
30		.85	1.6	1.25	1.35	1.1	1.0
31			1.7	-----	1.45	1.1	.9

Daily gage height, in feet, of Wimer canal near Laidlaw, Oreg., for 1906-1910—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1908.							
1.....	0.95	1.05	1.15	1.6	1.6	1.3	1.3
2.....	.95	1.05	1.15	1.6	1.6	1.3	1.3
3.....	.95	1.05	1.15	1.6	1.6	1.3	1.3
4.....	.97	1.05	1.25	1.6	1.6	1.3	1.3
5.....	.97	1.05	1.25	1.6	1.6	1.3	1.3
6.....	.9	1.05	1.25	1.6	1.6	1.1	1.3
7.....	.9	1.05	1.25	1.6	1.6	1.1	1.3
8.....	.9	1.05	1.30	1.6	1.6	1.3	1.3
9.....	.9	1.05	1.30	1.6	1.6	1.3	1.3
10.....	1.0	1.05	1.30	1.6	1.6	1.3	1.3
11.....	1.0	1.05	1.30	1.6	1.6	1.3	1.3
12.....	1.0	1.05	1.30	1.6	1.6	1.3	1.3
13.....	1.0	1.05	1.30	1.6	1.6	1.3	1.3
14.....	1.0	1.05	1.35	1.45	1.6	1.3	1.1
15.....	1.05	1.05	1.35	1.45	1.6	1.3	1.1
16.....	1.05	1.0	1.35	1.45	1.6	1.3	1.1
17.....	1.05	1.0	1.4	1.45	1.6	1.3	1.1
18.....	1.05	1.0	1.4	1.45	1.6	1.3	.9
19.....		1.0	1.4	1.55	1.3	1.3	.9
20.....		1.1	1.4	1.55	1.3	1.3	.9
21.....		1.1	1.4	1.55	1.3	1.3	.9
22.....		1.1	1.4	1.55	1.3	1.3	.9
23.....		1.1	1.4	1.55	1.3	1.3	.9
24.....		1.1	1.45	1.55	1.25	1.3	.9
25.....	1.05	1.1	1.45	1.55	1.25	1.3	.9
26.....	1.05	1.1	1.45	1.55	1.25	1.3	.9
27.....	1.05	1.1	1.45	1.55	1.3	1.3	.9
28.....	1.05	1.1	1.45	1.55	1.25	1.3	.9
29.....	1.05	1.15	1.5	1.6	1.3	1.3	.9
30.....	1.05	1.15	1.5	1.6	1.3	1.3	.9
31.....		1.15		1.6	1.3		.9
1909.							
1.....		.90	1.12	1.55	1.60	1.25	1.29
2.....		.90	1.12	1.56	1.60	1.32	
3.....		.91	1.18	1.59	1.60	1.29	1.28
4.....		.92	1.18	1.59	1.60	1.28	1.28
5.....		.93	1.17	1.59	1.60	1.25	1.28
6.....			1.15	1.51	1.60	1.26	1.30
7.....			1.12	1.50	1.58	1.25	1.28
8.....			1.11	1.35	1.59	1.25	1.29
9.....			1.10	1.40	1.60	1.24	1.29
10.....		1.00	1.11	1.60	1.60	1.28	1.29
11.....		1.02	1.11	1.60	1.61	1.21	1.29
12.....		1.05	1.11	1.60	1.60	1.20	1.30
13.....		1.02	1.11	1.60	1.60	1.21	1.29
14.....		1.05	1.11	1.60	1.60	1.20	1.29
15.....		1.02	1.16	1.58	1.60	1.21	1.29
16.....		1.02	1.15	1.60	1.60	1.21	1.29
17.....		1.02	1.14	1.55	1.60	1.22	1.29
18.....		1.02	1.10	1.45	1.60	1.21	1.30
19.....	1.00	1.05	1.10	1.35	1.60	1.20	1.30
20.....	1.00	1.05	1.20	1.60	1.60	1.21	1.30
21.....	.82	1.05	1.20	1.70	1.60	1.21	1.30
22.....	.85	1.06	1.20	1.70	1.59		1.30
23.....	.85	1.05	1.25	1.70	1.58	1.25	1.30
24.....	.85	1.06	1.21	1.70	1.58	1.25	1.30
25.....	.85	1.08	1.20	1.70	1.58	1.25	1.30
26.....	.88	1.10	1.21	1.68	1.60	1.28	1.30
27.....	.90	1.10	1.20	1.68	1.60	1.28	1.30
28.....	.89	1.08	1.18	1.67	1.59	1.28	1.30
29.....	.89	1.10	1.55	1.65	1.25	1.29	1.30
30.....	.89	1.12	1.55	1.70	1.25	1.29	1.30
31.....		1.12		1.67	1.25		1.30

Daily gage height, in feet, of Wimer canal near Laidlaw, Oreg., for 1906-1910—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1910.							
1.....		1.45	1.45	1.7			
2.....			1.4	1.5			
3.....		1.5	1.3	1.5			
4.....		1.4	1.4	1.5			
5.....		1.4	1.4	1.5			
6.....		1.4	1.4	1.55			
7.....		1.45	1.4	1.6			
8.....		1.6	1.35	1.5			
9.....		1.55	1.35	1.6			
10.....		1.5	1.4				
11.....	0.95	1.4	1.45				
12.....	.95	1.4	1.4				
13.....	.95	1.4	1.35				
14.....	1.3	1.4	1.35				
15.....	1.3	1.4	1.3				
16.....	1.3	1.4	1.4				
17.....	1.3	1.4	1.4				
18.....	1.3	1.4	1.4				
19.....	1.4	1.4	1.5				
20.....	1.4	1.4	1.45			1.0	
21.....	1.4	1.4	1.4				
22.....	1.4	1.4	1.4				
23.....	1.5	1.4	1.35			1.0	
24.....	1.5	1.45	1.6				
25.....	1.5	1.45	1.6				
26.....	1.5	1.4	1.55				
27.....	1.5	1.4	1.55				
28.....	1.5	1.4	1.55				
29.....	1.5	1.4	1.55				
30.....	1.45	1.4	1.55				
31.....		1.45	1.55				

Daily discharge, in second-feet, of Wimer canal near Laidlaw, Oreg., for 1906-1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1906.							
1.....				48	18	16	18
2.....				49	18	16	25
3.....				48	17	16	22
4.....				50	17	16	20
5.....				48	17	16	20
6.....				48	17	16	19
7.....				48	17	16	19
8.....				46	17	16	19
9.....			8.5	44	17	16	18
10.....				43	17	16	0
11.....				43	17	16	0
12.....				43	17	24	0
13.....				43	17	20	0
14.....				38	17	17	0
15.....		12		36	16	16	0
16.....			45	32	16	16	35
17.....			44	30	16	16	20
18.....			44	30	16	16	20
19.....			46	30	16	16	20
20.....			46	31	16	16	20
21.....			44	30	16	16	19
22.....			43	28	16	16	19
23.....			43	28	16	16	20
24.....			43	21	16	16	21
25.....			49	19	16	16	22
26.....			48	19	16	16	22
27.....			44	19	16	16	24
28.....			42	19	16	16	22
29.....			43	19	19	16	22
30.....			44	19	16	16	21
31.....				19	16		21

Daily discharge, in second-foot, of Wimer canal near Laidlaw, Oreg., for 1906-1910—Contd.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1907.							
1.....		24	48	34	34	25	25
2.....		24	46	34	32	24	27
3.....		23	46	38	32	24	27
4.....		23	42	34	32	27	26
5.....		24	45	33	32	27	26
6.....		25	42	33	33	27	26
7.....		26	33	33	33	27	27
8.....		28	25	34	34	27	27
9.....		30	25	39	32	26	27
10.....		30	36	39	32	26	27
11.....		30	33	38	32	26	27
12.....		27	23	38	30	26	27
13.....		26	23	34	30	26	27
14.....		32	19	33	30	26	27
15.....		34	18	33	30	26	27
16.....		38	23	33	28	26	0
17.....		40	25	33	33	26	0
18.....		44	39	30	32	26	21
19.....	23	38	27	36	32	25	21
20.....	23	34	30	36	32	25	22
21.....	23	33	30	36	27	25	22
22.....	24	30	27	32	27	25	22
23.....	24	30	27	33	27	25	22
24.....	23	30	30	33	30	25	22
25.....	23	33	32	36	28	25	22
26.....	23	36	34	36	27	25	22
27.....	23	33	34	36	27	25	23
28.....	23	38	30	33	27	25	23
29.....	22	40	30	32	27	25	24
30.....	22	42	32	34	27	25	23
31.....		45		38	27		23
1908.							
1.....	11.8	14.2	16.8	30.0	30.0	21.0	21.0
2.....	11.8	14.2	16.8	30.0	30.0	21.0	21.0
3.....	11.8	14.2	16.8	30.0	30.0	21.0	21.0
4.....	12.3	14.2	19.6	30.0	30.0	21.0	21.0
5.....	12.3	14.2	19.6	30.0	30.0	21.0	21.0
6.....	10.7	14.2	19.6	30.0	30.0	15.5	21.0
7.....	10.7	14.2	19.6	30.0	30.0	15.5	21.0
8.....	10.7	14.2	21.0	30.0	30.0	21.0	21.0
9.....	10.7	14.2	21.0	30.0	30.0	21.0	21.0
10.....	13.0	14.2	21.0	30.0	30.0	21.0	21.0
11.....	13.0	14.2	21.0	30.0	30.0	21.0	21.0
12.....	13.0	14.2	21.0	30.0	30.0	21.0	21.0
13.....	13.0	14.2	21.0	30.0	30.0	21.0	21.0
14.....	13.0	14.2	22.5	25.5	30.0	21.0	15.5
15.....	14.2	14.2	22.5	25.5	30.0	21.0	15.5
16.....	14.2	13.0	22.5	25.5	30.0	21.0	15.5
17.....	14.2	13.0	24.0	25.5	30.0	21.0	15.5
18.....	14.2	13.0	24.0	25.5	30.0	21.0	10.7
19.....	0	13.0	24.0	28.5	21.0	21.0	10.7
20.....	0	15.5	24.0	28.5	21.0	21.0	10.7
21.....	0	15.5	24.0	28.5	21.0	21.0	10.7
22.....	0	15.5	24.0	28.5	21.0	21.0	10.7
23.....	0	15.5	24.0	28.5	21.0	21.0	10.7
24.....	0	15.5	25.5	28.5	19.6	21.0	10.7
25.....	14.2	15.5	25.5	28.5	19.6	21.0	10.7
26.....	14.2	15.5	25.5	28.5	19.6	21.0	10.7
27.....	14.2	15.5	25.5	28.5	21.0	21.0	10.7
28.....	14.2	15.5	25.5	28.5	19.6	21.0	10.7
29.....	14.2	16.8	27.0	30.0	21.0	21.0	10.7
30.....	14.2	16.8	27.0	30.0	21.0	21.0	10.7
31.....		16.8		30.0	21.0		10.7

Daily discharge, in second-feet, of Wimer canal near Laidlaw, Oreg., for 1906-1910—Contd.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1909.							
1.....		10.9	16.4	29.3	31.0	20.0	21.1
2.....		10.9	16.4	29.6	31.0	22.0	^a 21.0
3.....		11.1	18.1	30.7	31.0	21.1	20.8
4.....		11.4	18.1	30.7	31.0	20.8	20.8
5.....		11.6	17.8	30.7	31.0	20.0	20.8
6.....		0	17.2	27.9	31.0	20.3	21.4
7.....		0	16.4	27.6	30.3	20.0	20.8
8.....		0	16.2	22.9	30.7	20.0	21.1
9.....		0	15.9	24.4	31.0	19.7	21.1
10.....		13.3	16.2	31.0	31.0	20.8	21.1
11.....		13.8	16.2	31.0	31.3	18.9	21.1
12.....		14.6	16.2	31.0	31.0	18.6	21.4
13.....		13.8	16.2	31.0	31.0	18.9	21.1
14.....		14.6	16.2	31.0	31.0	18.6	21.1
15.....		13.8	17.5	30.3	31.0	18.9	21.1
16.....		13.8	17.2	31.0	31.0	18.9	21.1
17.....		13.8	17.0	29.3	31.0	19.2	21.1
18.....		13.8	15.9	26.0	31.0	18.9	21.4
19.....	13.3	14.6	15.9	22.9	31.0	18.6	21.4
20.....	13.3	14.6	18.6	31.0	31.0	18.9	21.4
21.....	9.1	14.6	18.6	34.4	31.0	18.9	21.4
22.....	9.8	14.9	18.6	34.4	30.7	^a 20.6	21.4
23.....	9.8	14.6	20.0	34.4	30.3	20.0	21.4
24.....	9.8	14.9	18.9	34.4	30.3	20.0	21.4
25.....	9.8	15.4	18.6	34.4	30.3	20.0	21.4
26.....	10.5	15.9	18.9	33.7	31.0	20.8	21.4
27.....	10.9	15.9	18.6	33.7	31.0	20.8	21.4
28.....	10.7	^a 15.4	18.1	33.4	30.7	20.8	21.4
29.....	10.7	15.9	29.3	32.7	20.0	21.1	21.4
30.....	10.7	16.4	29.3	34.4	20.0	21.1	21.4
31.....		16.4		33.4	20.0		21.4
1910.							
1.....		26	26	33			
2.....		26	24	27			
3.....		27	21	27			
4.....		24	24	27			
5.....		24	24	27			
6.....		24	24	28			
7.....		26	24	30			
8.....		30	22	27			
9.....		28	22	30			
10.....		27	24				
11.....	12	24	26				
12.....	12	24	24				
13.....	12	24	22				
14.....	21	24	22				
15.....	21	24	21				
16.....	21	24	24				
17.....	21	24	24				
18.....	21	24	24				
19.....	24	24	27				
20.....	24	24	26			13	
21.....	24	24	24				
22.....	24	24	24				
23.....	27	24	22			13	
24.....	27	26	30				
25.....	27	26	30				
26.....	27	24	28				
27.....	27	24	28				
28.....	27	24	28				
29.....	27	24	28				
30.....	26	24	28				
31.....		26					

^a Discharge interpolated.

NOTE.—Daily discharge determined as follows:

1906. From poorly defined rating curves.

1907. From curve fairly well defined between 20 and 35 second-feet, except for April, which is very uncertain.

1908 to 1910. From two curves well defined between 5 and 30 second-feet, one applicable in 1908 and 1910 and the other in 1909.

Monthly discharge of Wimer canal near Laidlaw, Oreg., for 1906-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
June 16-30.....	49	42	44.5	1,320	B.
July.....	50	19	34.5	2,120	C.
August.....	18	16	16.5	1,010	C.
September.....	24	16	16.4	976	C.
October.....	35	0	17.0	1,050	C.
The period.....				6,480	
1907.					
April 19-30.....	24	22	23.0	548	C.
May.....	45	23	31.9	1,960	B.
June.....	48	18	31.8	1,890	B.
July.....	39	30	34.6	2,130	B.
August.....	34	27	30.2	1,860	B.
September.....	27	24	25.6	1,520	B.
October.....	27	0	23.0	1,410	B.
The period.....				11,300	
1908.					
April.....	14.2	0	10.3	613	A.
May.....	16.8	13.0	14.7	904	A.
June.....	27.0	16.8	22.4	1,330	A.
July.....	30.0	25.5	28.8	1,770	A.
August.....	30.0	19.6	26.0	1,600	A.
September.....	21.0	15.5	20.6	1,230	A.
October.....	21.0	10.7	15.6	959	A.
The period.....				8,410	
1909.					
April 19-30.....	13.3	9.1	10.7	255	A.
May.....	16.4	0	12.3	756	B.
June.....	29.3	15.9	18.2	1,080	A.
July.....	34.4	22.9	30.7	1,890	A.
August.....	31.3	20.0	29.8	1,830	A.
September.....	22.0	18.6	19.9	1,180	A.
October.....	21.4	20.8	21.2	1,300	A.
The period.....				8,290	
1910.					
April 11-30.....	27	12	22.6	897	A.
May.....	30	24	24.9	1,530	A.
June.....	30	21	24.8	1,480	A.
July 1-9.....	33	27	28.4	507	A.

NOTE.—Discharges for 1908 and following years represent the amount of water used for irrigation and are not comparable with those for 1906 and 1907, which represent the amount of water diverted at the intake.

COLUMBIA SOUTHERN CANAL NEAR LAIDLAW, OREG.

Location.—In sec. 2, T. 18 S., R. 10 E., one-fourth mile below headgates, and about 15 miles southwest of Laidlaw.

Records available.—1906 to 1910; irrigating season.

Gage.—Vertical staff on upstream side of wasteway.

Channel.—Short flume at gage; earth section below; fairly permanent.

Discharge measurements.—Made by wading or from foot log near gage.

Winter flow.—Not operated during season of ice.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by the Columbia Southern Irrigation Co.

Discharge measurements of Columbia Southern canal near Laidlaw, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Fect.</i>	<i>Sec.-ft.</i>	1908.		<i>Fect.</i>	<i>Sec.-ft.</i>
June 21	Ivan Landes.....		^a 48.3	Apr. 1	H. D. McGlashan.....	1.68	62
Aug. 10	.....do.....		^a 69.4	1	.....do.....	1.45	40
1906.				1	.....do.....	1.04	16
Apr. 19	Ivan Landes.....		^a 35	2	.....do.....	1.49	44
May 15	.....do.....	1.60	52	June 16	J. H. Lewis.....	1.92	88
May 15	.....do.....	1.78	72	23	H. D. McGlashan.....	1.97	93
June 9	.....do.....	1.15	22	1909.			
16	L. R. Allen.....	1.15	22	Apr. 19	R. B. Post.....	1.55	46
16	.....do.....	1.62	57	May 28	.....do.....	2.10	104
18	Stevens and Landes....	1.65	63	Aug. 1	.....do.....	1.84	72.5
1907.				1910.			
Apr. 14	I. E. Oakes.....	1.48	46	Apr. 20	L. R. Allen.....	1.65	53.5
May 5	W. P. Hardesty.....	1.60	52	June 22	.....do.....	2.01	95
				Sept. 17	Allen and Davenport...	1.70	59

^a Measured 9 miles below headgates.

Daily gage height, in feet, of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1906.							1906.						
1.....		1.70	1.87	1.75	1.68	1.70	16.....	1.70	1.65	1.88	1.70	1.68	1.70
2.....		1.75	1.87	1.75	1.68	1.70	17.....	1.70	1.65	2.00	1.70	1.68	1.65
3.....		1.75	1.95	1.75	1.68	1.65	18.....	1.75	1.65	1.95	1.70	1.68	1.65
4.....		1.75	1.95	1.75	1.68	1.65	19.....	1.75	1.65	1.95	1.70	1.68	1.65
5.....		1.75	1.95	1.75	1.68	1.65	20.....	1.75	1.65	1.95	1.70	1.68	1.65
6.....		1.70	2.05	1.75	1.68	1.70	21.....	1.75	1.70	1.90	1.70	1.68	1.60
7.....		1.70	2.05	1.75	1.68	1.70	22.....	1.75	1.70	1.90	1.70	1.68	1.60
8.....		1.70	2.05	1.75	1.68	1.70	23.....	1.75	1.70	1.90	1.70	1.68	1.60
9.....		1.70	2.05	1.75	1.68	1.70	24.....	1.75	1.70	1.80	1.70	1.68	1.65
10.....		1.70	2.10	1.75	1.68	1.72	25.....	1.75	1.80	1.80	1.70	1.70	1.65
11.....		1.70	2.10	1.75	1.68	1.72	26.....	1.75	1.85	1.80	1.70	1.70	1.60
12.....		1.70	2.10	1.75	1.68	1.70	27.....	1.75	1.80	1.80	1.70	1.70	1.70
13.....		1.70	2.10	1.75	1.68	1.70	28.....	1.75	1.80	1.80	1.70	1.70	1.65
14.....		1.70	2.10	1.75	1.68	1.70	29.....	1.70	1.87	1.80	1.70	1.70	1.65
15.....	1.70	1.65	2.00	1.70	1.68	1.70	30.....	1.70	1.87	1.80	1.70	1.70	1.65
							31.....	1.70	.....	1.80	1.70	.....	1.65

Daily gage height, in feet, of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910—
Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1907.							
1.....	1.25	1.45	1.85	2.1	2.2	1.75	1.65
2.....	1.5	1.5	1.85	2.1	2.05	1.8	1.7
3.....	1.5	1.6	1.9	2.1	1.9	1.8	1.65
4.....	1.5	1.6	1.9	2.1	1.9	1.75	1.65
5.....	1.4	1.6	2.0	2.1	1.9	1.75	1.65
6.....	1.4	1.6	2.0	2.1	1.9	1.8	1.65
7.....	1.45	1.6	2.0	2.1	1.9	1.8	1.65
8.....	1.45	1.7	2.0	2.1	2.1	1.8	1.65
9.....	1.45	1.65	2.0	2.15	1.9	1.75	1.65
10.....	1.45	1.7	2.0	2.15	1.8	1.75	1.65
11.....	1.45	1.7	2.0	2.15	1.8	1.75	1.65
12.....	1.45	1.7	2.0	2.15	1.8	1.75	1.65
13.....	1.45	1.7	2.0	2.15	1.75	1.75	1.65
14.....	1.45	1.7	2.0	2.15	1.8	1.75	1.65
15.....	1.45	1.78	2.0	2.15	1.8	1.75	1.65
16.....	1.45	1.78	2.0	2.15	1.8	1.75	1.7
17.....	1.45	1.78	2.0	2.2	1.8	1.75	1.7
18.....	1.45	1.78	2.0	2.1	1.75	1.75	1.7
19.....	1.45	1.78	2.05	2.2	1.75	1.7	1.7
20.....	1.45	1.78	2.05	2.2	1.75	1.7	1.7
21.....	1.45	1.8	2.05	2.2	1.7	1.7	1.7
22.....	1.45	1.8	2.05	2.1	1.7	1.7	1.7
23.....	1.4	1.85	2.05	2.1	1.7	1.7	1.7
24.....	1.4	1.85	2.05	2.2	1.9	1.7	1.7
25.....	1.4	1.85	2.05	2.2	1.85	1.7	1.7
26.....	1.4	1.85	2.05	2.2	1.8	1.7	1.7
27.....	1.4	1.85	2.05	2.1	1.8	1.7	1.7
28.....	1.45	1.85	2.05	2.0	1.8	1.7	1.7
29.....	1.45	1.85	2.1	2.0	1.75	1.7	1.7
30.....	1.45	1.85	2.1	2.0	1.75	1.7	1.7
31.....		1.85		2.1	1.75		1.7
1908.							
1.....	1.45	1.5	1.8	2.1	1.9	1.65	1.65
2.....	1.5	1.45	1.8	2.1	1.8	1.65	1.65
3.....	1.5	1.45	1.8	2.1	1.8	1.65	1.65
4.....	1.55	1.4	1.8	2.1	1.8	1.65	1.65
5.....	1.55	1.4	1.8	2.1	1.75	1.65	1.65
6.....	1.55	1.5	1.8	2.1	1.7	1.70	1.6
7.....	1.55	1.5	1.8	2.1	1.7	1.70	1.6
8.....	1.5	1.5	1.85	2.1	1.7	1.65	1.6
9.....	1.5	1.5	1.9	2.1	1.65	1.65	1.6
10.....		1.55	1.9	2.1	1.65	1.65	1.6
11.....		1.55	1.9	2.1	1.65	1.65	1.6
12.....		1.55	1.9	2.1	1.65	1.65	1.6
13.....		1.6	1.95	2.1	1.65	1.65	1.65
14.....		1.6	1.95	2.1	1.65	1.65	1.6
15.....		1.6	1.95	2.1	1.65	1.65	1.6
16.....	1.2	1.6	1.95	2.1	1.65	1.65	1.6
17.....	1.2	1.6	2.0	2.1	1.65	1.65	1.6
18.....	1.2	1.6	2.0	2.1	1.65	1.65	1.6
19.....	1.2	1.6	2.0	2.1	1.75	1.65	1.6
20.....	1.5	1.6	2.0	2.1	1.75	1.65	1.6
21.....	1.5	1.65	1.9	2.1	1.75	1.65	1.6
22.....	1.5	1.65	1.95	2.1	1.75	1.65	1.6
23.....	1.45	1.7	2.0	2.1	1.75	1.65	1.6
24.....	1.45	1.75	2.0	2.1	1.7	1.65	1.6
25.....	1.45	1.75	2.0	2.1	1.7	1.65	1.6
26.....	1.5	1.75	2.0	2.1	1.7	1.65	1.6
27.....	1.5	1.75	2.0	2.1	1.7	1.65	1.6
28.....	1.45	1.75	2.0	1.9	1.65	1.65	1.6
29.....	1.45	1.8	2.0	1.9	1.65	1.65	1.6
30.....	1.5	1.8	2.0	2.0	1.65	1.65	1.6
31.....		1.8		1.9	1.65		1.6

Daily gage height, in feet, of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910—
Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1909.							
1.....		1.75	2.10	2.20	1.84	1.64	1.60
2.....		1.75	2.10	2.17	1.80	1.75	.....
3.....		1.75	2.10	2.20	1.80	1.74	1.60
4.....		1.85	2.10	2.20	1.78	1.71	1.58
5.....		1.85	2.10	2.20	1.70	1.70	1.59
6.....	0.65	1.85	2.10	2.15	1.67	1.68	1.65
7.....	.65	1.85	2.10	2.18	1.65	1.65	.....
8.....	.65	1.90	2.10	2.15	1.65	1.65	1.55
9.....	1.10	1.90	2.10	2.15	1.71	1.64	1.65
10.....	1.40	1.90	2.10	2.15	1.68	1.66	1.56
11.....	1.10	1.90	2.15	2.15	1.68	1.62	1.57
12.....	1.10	1.90	2.15	2.15	1.65	1.62	1.56
13.....	1.54	1.90	2.15	2.15	1.66	1.61	1.55
14.....	1.66	1.95	2.18	2.15	1.65	1.61	1.55
15.....	1.69	1.95	2.18	2.15	1.63	1.63	1.55
16.....	1.69	1.95	2.10	2.15	1.61	1.61	1.55
17.....	1.65	1.95	2.10	2.15	1.62	1.62	1.55
18.....	1.60	2.00	2.10	2.03	1.62	1.61	1.57
19.....	1.55	2.10	2.10	2.03	1.62	1.61	1.60
20.....	1.55	2.07	2.10	1.93	1.64	1.60	1.60
21.....	1.60	2.06	2.10	2.00	1.62	1.62	1.60
22.....	1.65	2.07	2.10	1.98	1.58	.....	1.60
23.....	1.67	2.06	2.10	2.20	1.58	1.60	1.58
24.....	1.65	2.10	2.10	2.15	1.56	1.60	1.57
25.....	1.65	2.10	2.10	2.18	1.57	1.61	1.56
26.....	1.75	2.10	2.10	2.00	1.65	1.62	1.56
27.....	1.75	2.10	2.10	1.85	1.64	1.60	1.58
28.....	1.75	2.10	2.13	1.85	1.57	1.60	1.57
29.....	1.75	2.10	2.15	1.95	1.65	1.63	1.59
30.....	1.75	2.10	2.12	2.00	1.65	1.65	1.56
31.....		2.10	.....	1.86	1.64	.....	1.57
1910.							
1.....	1.45	1.8	2.15	2.0	1.65	1.7	.....
2.....	1.45	1.75	2.15	2.0	1.65	1.7	.....
3.....	1.45	1.75	2.15	1.95	1.65	1.7	.....
4.....	1.45	1.75	2.1	2.0	1.65	1.7	.....
5.....	1.5	1.75	2.2	2.0	1.65	1.7	.....
6.....	1.5	1.75	2.15	2.0	1.65	1.75	.....
7.....	1.5	1.75	2.15	1.95	1.65	1.7	.....
8.....	1.5	1.8	2.15	2.0	1.65	1.7	.....
9.....	1.5	1.75	2.15	2.0	1.65	1.7	.....
10.....	1.5	1.8	2.15	2.0	1.65	1.7	.....
11.....	1.5	1.75	2.2	2.0	1.65	1.7	.....
12.....	1.5	1.75	2.15	2.0	1.65	.....	.....
13.....	1.5	1.75	2.15	1.95	1.65	.....	.....
14.....	1.5	1.8	2.15	1.9	1.65	.....	.....
15.....	1.5	1.85	2.15	1.8	1.6	.....	.....
16.....	1.5	1.85	2.15	1.8	1.6	.....	.....
17.....	1.5	1.85	2.15	1.8	1.6	.....	.....
18.....	1.5	1.85	2.15	1.8	1.6	.....	.....
19.....	1.6	1.85	2.15	1.75	1.7	.....	.....
20.....	1.6	1.85	2.15	1.75	1.7	.....	.....
21.....	1.6	1.85	2.0	1.85	1.7	.....	.....
22.....	1.65	1.85	2.0	1.7	1.7	.....	.....
23.....	1.65	2.0	1.95	1.75	1.7	.....	.....
24.....	1.65	2.0	2.0	1.7	1.7	.....	.....
25.....	1.75	2.05	1.95	1.7	1.7	.....	.....
26.....	1.75	2.05	2.05	1.7	1.7	.....	.....
27.....	1.75	2.05	2.05	1.7	1.7	.....	.....
28.....	1.75	2.05	2.05	1.7	1.7	.....	.....
29.....	1.75	2.05	2.0	1.7	1.7	.....	.....
30.....	1.75	2.1	2.0	1.65	1.7	.....	.....
31.....		2.15	.....	1.65	1.7	.....	.....

NOTE.—Possibly some water running after gage readings were suspended Sept. 11, 1910; no record of the length of time the water ran.

Daily discharge, in second-feet, of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1906.							
1.....			64	82	69	62	64
2.....			69	82	69	62	64
3.....			69	92	69	62	60
4.....			69	92	69	62	60
5.....			69	92	69	62	60
6.....			64	106	69	62	64
7.....			64	106	69	62	64
8.....			64	106	69	62	64
9.....			64	106	69	62	64
10.....			64	114	69	62	66
11.....			64	114	69	62	66
12.....			64	114	69	62	64
13.....			64	114	69	62	64
14.....			64	114	69	62	64
15.....		64	60	99	64	62	64
16.....		64	60	84	64	62	64
17.....		64	60	99	64	62	60
18.....		69	60	92	64	62	60
19.....		69	60	92	64	62	60
20.....		69	60	92	64	62	60
21.....		69	64	86	64	62	55
22.....		69	64	86	64	62	55
23.....		69	64	86	64	62	55
24.....		69	64	74	64	62	60
25.....		69	74	74	64	64	60
26.....		69	80	74	64	64	55
27.....		69	74	74	64	64	64
28.....		69	74	74	64	64	60
29.....		64	82	74	64	64	60
30.....		64	82	74	64	64	60
31.....		64	82	74	64	64	60
1907.							
1.....	27	41	79	112	126	68	58
2.....	45	45	79	112	105	73	63
3.....	45	54	85	112	85	73	58
4.....	45	54	85	112	85	68	58
5.....	37	54	98	112	85	68	58
6.....	37	54	98	112	85	73	58
7.....	41	54	98	112	85	73	58
8.....	41	63	98	112	112	73	58
9.....	41	58	98	119	85	68	58
10.....	41	63	98	119	73	68	58
11.....	41	63	98	119	73	68	58
12.....	41	63	98	119	73	68	58
13.....	41	63	98	119	68	68	58
14.....	41	63	98	119	73	68	58
15.....	41	71	98	119	73	68	58
16.....	41	71	98	119	73	68	63
17.....	41	71	98	126	73	68	63
18.....	41	71	98	112	68	68	63
19.....	41	71	105	126	68	63	63
20.....	41	71	105	126	68	63	63
21.....	41	73	105	126	63	63	63
22.....	41	73	105	112	63	63	63
23.....	37	79	105	112	63	63	63
24.....	37	79	105	126	85	63	63
25.....	37	79	105	126	79	63	63
26.....	37	79	105	126	73	63	63
27.....	37	79	105	112	73	63	63
28.....	41	79	105	98	73	63	63
29.....	41	79	112	98	68	63	63
30.....	41	79	112	98	68	63	63
31.....		79	112	112	68	63	63

Daily discharge, in second-feet, of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1908.							
1.....	41	45	73	112	85	58	58
2.....	45	41	73	112	73	58	58
3.....	45	41	73	112	73	58	58
4.....	50	37	73	112	73	58	58
5.....	50	37	73	112	68	58	58
6.....	50	45	73	112	63	63	54
7.....	50	45	73	112	63	63	54
8.....	45	45	79	112	63	58	54
9.....	45	45	85	112	58	58	54
10.....	0	50	85	112	58	58	54
11.....	0	50	85	112	58	58	54
12.....	0	50	85	112	58	58	54
13.....	0	54	92	112	58	58	58
14.....	0	54	92	112	58	58	54
15.....	0	54	92	112	58	58	54
16.....	24	54	92	112	58	58	54
17.....	24	54	98	112	58	58	54
18.....	24	54	98	112	68	58	54
19.....	24	54	98	112	68	58	54
20.....	45	54	98	112	68	58	54
21.....	45	58	85	112	68	58	54
22.....	45	58	92	112	68	58	54
23.....	41	63	98	112	68	58	54
24.....	41	68	98	112	63	58	54
25.....	41	68	98	112	63	58	54
26.....	45	68	98	112	63	58	54
27.....	45	68	98	112	63	58	54
28.....	41	68	98	85	58	58	54
29.....	41	73	98	85	58	58	54
30.....	45	73	98	98	58	58	54
31.....		73		85	58		54
1909.							
1.....		64	104	117	73	54	50
2.....		64	104	113	69	64	50
3.....		64	104	117	69	63	50
4.....		74	104	117	67	60	48
5.....		74	104	117	59	59	49
6.....	2	74	104	110	56	57	54
7.....	2	74	104	114	54	54	50
8.....	2	80	104	110	54	54	46
9.....	16	80	104	110	60	54	54
10.....	34	80	104	110	57	55	47
11.....	16	80	110	110	57	52	48
12.....	16	80	110	110	54	52	47
13.....	46	80	110	110	55	51	46
14.....	55	86	114	110	54	51	46
15.....	58	86	114	110	53	53	46
16.....	58	86	104	110	51	51	46
17.....	54	86	104	110	52	52	46
18.....	50	92	104	101	52	51	48
19.....	46	104	104	96	52	51	50
20.....	46	100	104	84	54	50	50
21.....	50	99	104	92	52	52	50
22.....	54	100	104	90	48	51	50
23.....	56	99	104	117	48	50	48
24.....	54	104	104	110	47	50	48
25.....	54	104	104	114	48	51	47
26.....	64	104	104	92	54	52	47
27.....	64	104	104	74	54	50	48
28.....	64	104	108	74	48	50	48
29.....	64	104	110	86	54	53	49
30.....	64	104	107	92	54	54	47
31.....		104		76	54		48

Daily discharge, in second-feet, of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910—Continued.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1910.							
1.....	38	69	111	91	54	59	.....
2.....	38	64	111	91	54	59	.....
3.....	38	64	111	85	54	59	.....
4.....	38	64	104	91	54	59	.....
5.....	42	64	118	91	54	59	.....
6.....	42	64	111	91	54	64	.....
7.....	42	64	111	85	54	59	.....
8.....	42	69	111	91	54	59	.....
9.....	42	64	111	91	54	59	.....
10.....	42	69	111	91	54	59	.....
11.....	42	64	118	91	54	59	.....
12.....	42	64	111	91	54	.....	.....
13.....	42	64	111	85	54	.....	.....
14.....	42	69	111	79	54	.....	.....
15.....	42	74	111	69	50	.....	.....
16.....	42	74	111	69	50	.....	.....
17.....	42	74	111	69	50	.....	.....
18.....	42	74	111	69	50	.....	.....
19.....	50	74	111	64	59	.....	.....
20.....	50	74	111	64	59	.....	.....
21.....	50	74	91	74	59	.....	.....
22.....	54	74	91	59	59	.....	.....
23.....	54	91	85	64	59	.....	.....
24.....	54	91	91	59	59	.....	.....
25.....	64	98	85	59	59	.....	.....
26.....	64	98	98	59	59	.....	.....
27.....	64	98	98	59	59	.....	.....
28.....	64	98	98	59	59	.....	.....
29.....	64	98	91	59	59	.....	.....
30.....	64	104	91	54	59	.....	.....
31.....	.....	111	.....	54	59	.....	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1906, fairly well defined; 1907 and 1908, well defined between 14 and 120 second-feet; 1909 and 1910, well defined between 35 and 110 second-feet. Possibly water in canal after Sept. 11, 1910, but gage readings were suspended.

Monthly discharge of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910.

Month.	Discharge in second-feet.			Total in acre-feet.	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
May 15-31.....	69	64	67.2	2,260	B.
June.....	82	60	66.6	3,960	B.
July.....	114	74	91.7	5,640	B.
August.....	69	64	66.3	4,080	B.
September.....	64	62	62.4	3,710	B.
October.....	64	55	61.3	3,770	B.
The period.....	.....	.....	.....	23,400	.....
1907.					
April.....	45	27	40.0	2,380	A.
May.....	79	41	66.9	4,110	A.
June.....	112	79	99.1	5,900	A.
July.....	126	98	116	7,130	A.
August.....	126	63	77.8	4,780	A.
September.....	73	63	66.8	3,970	A.
October.....	63	58	60.7	3,730	A.
The period.....	.....	.....	.....	32,000	.....
1908.					
April.....	50	0	33.1	1,970	A.
May.....	73	37	54.9	3,380	A.
June.....	98	73	88.4	5,260	A.
July.....	112	85	109	6,700	B.
August.....	85	58	63.7	3,920	A.
September.....	63	58	58.3	3,470	A.
October.....	58	54	54.8	3,370	A.
The period.....	.....	.....	.....	28,100	.....

Monthly discharge of Columbia Southern canal near Laidlaw, Oreg., for 1906-1910—Contd.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
April 6-30.....	64	2	43.6	2,160	A.
May.....	104	64	88.3	5,430	A.
June.....	114	104	106	6,310	A.
July.....	117	74	103	6,330	A.
August.....	73	47	55.3	3,400	A.
September.....	64	50	53.4	3,180	A.
October.....	54	46	48.4	2,980	A.
The period.....				29,800	
1910.					
April.....	64	38	47.9	2,850	A.
May.....	111	64	77.3	4,750	A.
June.....	118	85	105	6,250	A.
July.....	91	54	74.4	4,570	A.
August.....	59	50	55.6	3,420	A.
September 1-11.....	64	59	59.5	1,300	A.
The period.....				23,100	

LEWIS CREEK NEAR LAIDLAW, OREG.

Location.—At mouth of stream, 2 miles above intake of Columbia Southern canal, about 20 miles northeast of Laidlaw.

Records presented.—April 2, 1908, to October 28, 1909, fragmentary.

Gage.—Vertical staff on left bank.

Channel.—Sand and gravel; one channel at all stages.

Discharge measurements.—Made from foot log.

Lewis Creek, a stream about 1½ miles long, rises in a small lake known as Lewis Lake.

Discharge measurements of Lewis Creek near Laidlaw, Oreg., in 1908.

Date.	Hydrographer.	Gage height.	Dis-charge.
Apr. 2	H. D. McGlashan.....	<i>Feet.</i> 0.69	<i>Sec.-ft.</i> 1.3
June 24	.....do.....	.64	1.4

Daily gage height, in feet, of Lewis Creek near Laidlaw, Oreg., for 1908-9.

Date.	Gage height.	Date.	Gage height.	Date.	Gage height.
1908.		1908.		1909.	
Apr. 21.....	0.69	Aug. 17.....	0.6	Feb. 6.....	0.60
22.....	1.01	24.....	.6	14.....	.58
28.....	.9	31.....	.6	20.....	.60
30.....	.92	Sept. 2.....	.6	27.....	.58
May 8.....	.91	7.....	.6	Mar. 6.....	.58
15.....	.9	14.....	.6	13.....	.56
22.....	.85	21.....	.6	20.....	.58
29.....	.9	28.....	.6	27.....	.58
June 5.....	.65	Oct. 1.....	.6	Sept. 8.....	.50
7.....	.75	12.....	.6	17.....	.50
24.....	.65	19.....	.65	24.....	.50
July 3.....	.6	30.....	.6	26.....	.60
11.....	.6			Oct. 5.....	.50
13.....	.6	1909.		7.....	.51
16.....	.6	Jan. 2.....	.62	15.....	.51
26.....	.6	9.....	.56	17.....	.51
27.....	.6	16.....	.53	22.....	.55
Aug. 5.....	.6	23.....	.60	28.....	.52
12.....	.6	30.....	.60		

SQUAW CREEK NEAR SISTERS, OREG.

Location.—In sec. 30, T. 15 S., R. 10 E., about 4 miles above Sisters and above all diversions except McAllister's ditch.

Records presented.—April 17, 1906, to September 30, 1910.

Drainage area.—63 square miles.

Gage.—Vertical staff.

Channel.—Gravel and rock; practically permanent; backwater from a changeable dam reaches gage and introduces changes in rating curve.

Discharge measurements.—Made from a foot log just above gage or by wading.

Winter flow.—Creek does not freeze over at station, but gage readings are occasionally affected by shore and anchor ice. Ice also tends to jam above dam and during extreme cold weather the effect is very marked.

Diversions.—McAllister's ditch heads above this station and its flow is added to get the total. Low-water flow of stream is all diverted by several irrigation ditches below station.

Accuracy.—Results good.

Discharge measurements of Squaw Creek near Sisters, Oreg., in 1906-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
Apr. 17	Ivan Landes.....	3.65	106	Mar. 30	H. D. McGlasham....	2.79	76
June 8	L. R. Allen.....	3.53	105	June 25	.....do.....	4.06	157
8	Ivan Landes.....	3.60	114	Oct. 23	R. B. Post.....	3.40	63
15	J. H. Lewis and L. R. Allen.....	4.09	205	1909.			
Sept. 22	C. W. Allen.....	3.55	110	May 29	R. B. Post.....	3.6	109
				Oct. 14	.....do.....	3.22	61
1907.				1910.			
Apr. 11	I. E. Oakes.....	2.02	117	Apr. 23	L. R. Allen.....	3.39	136
				June 29	.....do.....	3.43	142
				Sept. 16	Allen and Davenport...	3.05	68

Daily gage height, in feet, of Squaw Creek near Sisters, Oreg., for 1906-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1906.				1906.				1906.			
1.....	4.3	3.75	3.6	11.....	4.55	3.9	3.45	21.....	4.1	3.5	3.45
2.....	4.2	3.7	3.6	12.....	4.9	4.0	3.45	22.....	4.2	3.5	3.55
3.....	4.4	3.72	3.5	13.....	4.52	3.95	3.4	23.....	4.2	3.55	3.4
4.....	4.95	3.7	3.55	14.....	4.4	3.8	3.3	24.....	3.8	3.55	3.35
5.....	4.6	3.8	3.55	15.....	4.35	3.9	3.3	25.....	3.85	3.55	3.35
6.....	4.6	4.0	3.75	16.....	4.1	3.75	3.25	26.....	3.75	3.55	3.3
7.....	4.55	4.0	3.8	17.....	4.1	3.65	3.25	27.....	4.0	3.6	3.3
8.....	4.5	3.85	4.1	18.....	4.0	3.65	3.35	28.....	4.2	3.6	3.3
9.....	4.3	3.8	3.6	19.....	2.25	3.6	3.4	29.....	3.95	3.5	3.4
10.....	4.5	4.0	3.5	20.....	4.05	3.6	3.45	30.....	3.9	3.6	3.4
								31.....	3.85	3.5	.....

Daily gage height, in feet, of Squaw Creek near Sisters, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	3.6	3.1	3.0	1.15	1.45	2.0	1.8	2.05	4.3	4.1	4.0	3.3
2.....	3.65	3.1	1.8	1.2	1.4	1.9	1.8	2.1	4.25	4.15	4.0	3.3
3.....	3.65	3.1	1.6	1.4	1.45	1.9	1.8	2.5	4.25	4.4	3.9	3.3
4.....	3.65	3.1	1.6	1.5	4.5	1.85	1.8	2.5	4.2	4.2	3.85	3.4
5.....	3.3	3.1	1.6	1.4	4.4	1.85	1.8	2.5	4.1	4.0	3.85	3.55
6.....	3.35	3.15	1.6	1.3	4.0	1.9	1.85	2.7	4.05	4.0	3.9	3.5
7.....	3.3	5.25	3.0	1.3	3.2	1.9	1.9	2.8	3.9	4.05	3.8	3.45
8.....	3.35	4.1	1.7	1.3	2.3	1.9	1.95	2.9	3.9	4.15	3.8	3.4
9.....	3.3	3.05	1.75	1.35	2.4	1.9	1.94	2.95	3.95	4.15	3.75	3.4
10.....	3.45	5.7	1.7	4.5	2.35	1.85	2.1	3.0	4.0	4.2	3.7	3.5
11.....	3.4	3.4	1.7	1.3	2.3	1.9	2.0	3.05	4.25	4.4	.....	3.65
12.....	3.35	3.2	1.75	1.5	2.2	1.9	2.0	3.05	4.0	4.3	3.5	3.6
13.....	3.3	4.2	2.9	1.5	2.2	1.85	2.0	3.0	3.85	4.3	.....	3.45
14.....	3.3	4.5	1.7	1.5	2.15	1.8	2.0	3.0	3.7	4.05	.....	3.3
15.....	3.3	3.0	1.7	4.0	2.1	1.8	2.05	3.35	3.65	3.95	.....	3.4
16.....	3.3	2.4	1.75	4.0	2.1	1.8	2.1	3.4	3.6	4.0	.....	3.4
17.....	3.35	2.1	1.7	3.95	2.1	1.8	2.1	3.4	3.6	3.95	.....	3.2
18.....	3.3	2.0	1.65	3.9	2.1	1.8	2.1	3.45	3.7	3.85	.....	3.15
19.....	3.3	1.95	1.6	3.9	2.1	1.8	2.1	3.6	4.0	3.85	.....	3.1
20.....	3.3	1.9	2.3	3.9	2.05	1.8	2.0	3.45	4.1	3.9	.....	3.1
21.....	3.3	1.8	2.05	3.95	2.05	1.8	2.0	3.45	4.1	4.05	.....	3.1
22.....	3.3	1.8	2.0	3.9	2.0	1.8	2.1	3.4	3.9	4.0	3.35	3.1
23.....	3.35	1.8	1.9	1.5	2.05	1.8	2.1	3.4	3.8	4.0	3.5	3.1
24.....	3.35	1.8	1.95	1.45	2.1	1.85	2.05	3.4	3.75	4.05	3.7	3.1
25.....	3.35	1.7	2.1	1.4	2.1	1.8	2.05	3.45	3.8	3.85	3.75	3.2
26.....	4.0	1.7	2.0	1.4	2.05	1.85	2.05	3.5	3.9	4.0	3.6	3.1
27.....	3.55	1.7	1.9	1.4	2.0	1.8	2.05	3.8	4.5	3.9	3.4	3.1
28.....	3.35	3.5	1.9	1.4	2.05	1.8	2.0	3.7	4.2	3.95	3.4	3.1
29.....	3.3	3.0	1.8	1.45	.....	1.8	2.0	4.2	4.1	3.95	3.3	3.1
30.....	3.2	2.05	1.8	1.5	.....	1.8	2.0	4.15	4.1	4.05	3.3	3.15
31.....	3.2	.....	1.75	1.5	.....	1.8	.....	4.15	.....	3.95	3.35	.....
1907-8.												
1.....	3.1	3.15	3.1	3.2	4.0	2.9	2.7	3.05	3.05	4.15	4.1	3.55
2.....	3.1	3.1	3.05	3.2	4.0	2.9	2.7	3.05	3.0	4.2	4.05	3.55
3.....	3.15	3.1	3.05	3.2	4.0	3.0	2.75	3.05	2.95	4.3	4.05	3.55
4.....	3.2	3.1	3.2	3.15	3.6	3.0	3.0	.....	3.0	4.3	3.95	3.7
5.....	3.2	3.05	3.1	3.15	3.6	2.75	3.05	2.9	3.05	4.3	4.0	3.8
6.....	3.25	3.05	3.1	3.1	3.55	2.75	3.0	3.2	3.2	4.3	3.95	3.75
7.....	3.2	3.05	3.2	3.1	3.35	2.75	2.9	3.3	3.4	4.2	4.0	3.75
8.....	3.2	3.1	3.1	3.1	2.8	2.75	2.95	3.1	3.6	4.6	4.0	3.5
9.....	3.2	3.05	3.1	3.1	2.8	2.75	3.0	2.95	3.6	4.45	4.0	3.5
10.....	3.2	3.0	3.15	3.15	2.75	2.75	3.05	3.1	3.85	4.45	4.0	3.5
11.....	3.2	3.0	3.15	3.1	3.0	2.75	3.1	3.0	4.1	4.4	3.85	3.6
12.....	3.2	3.0	3.2	3.05	3.1	2.8	3.1	2.95	4.15	4.6	3.8	3.7
13.....	3.35	3.05	3.2	3.05	3.1	2.85	3.2	2.9	4.15	4.5	3.9	3.7
14.....	3.2	3.05	3.4	3.05	2.8	2.85	3.25	2.95	4.35	4.4	3.8	3.7
15.....	3.3	3.05	3.6	3.1	2.8	4.0	3.25	2.9	4.3	4.35	3.8	3.65
16.....	3.2	3.1	3.7	3.1	2.8	4.05	3.3	2.8	4.3	4.2	3.95	3.6
17.....	3.2	3.05	3.85	3.05	2.8	3.45	3.35	2.8	4.2	4.2	3.85	3.5
18.....	3.2	3.35	3.85	3.05	2.8	3.25	3.35	2.8	4.1	4.15	3.9	3.5
19.....	3.2	3.1	3.85	3.0	2.8	3.2	3.9	2.75	4.0	4.2	3.95	3.55
20.....	3.2	3.05	3.15	3.0	2.8	3.05	3.2	2.7	3.9	4.25	3.9	3.6
21.....	3.2	3.05	4.0	3.2	3.0	3.0	3.2	2.75	3.85	4.25	3.9	3.6
22.....	3.2	3.1	4.0	3.2	3.2	3.0	2.95	2.8	3.8	4.35	3.8	3.5
23.....	3.2	3.0	3.9	3.2	3.2	2.95	2.85	2.9	3.9	4.25	3.8	3.45
24.....	3.2	3.5	3.85	3.2	2.75	2.95	2.85	3.05	3.9	4.2	3.7	3.4
25.....	3.2	3.3	3.85	3.2	2.75	2.9	2.75	3.2	4.1	4.15	3.6	3.35
26.....	3.15	3.2	3.5	3.2	2.75	3.1	2.7	3.0	4.2	4.05	3.6	3.35
27.....	3.15	3.4	3.4	3.2	2.7	2.85	2.7	3.0	4.0	4.0	3.6	3.35
28.....	3.15	3.1	3.6	3.05	2.7	2.85	2.65	3.1	3.95	4.0	3.6	3.4
29.....	3.35	3.1	3.8	3.1	2.7	2.9	2.7	3.25	4.0	4.05	3.5	3.4
30.....	3.15	3.1	3.8	3.1	.....	2.8	2.75	3.1	4.1	3.95	3.45	3.4
31.....	3.15	.....	3.8	3.4	.....	2.8	.....	3.0	.....	4.05	3.5	.....

Daily gage height, in feet, of Squaw Creek near Sisters, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	3.4	3.5	3.4	3.8	-----	-----	-----	3.55	4.1	4.0	3.85	3.45
2	3.35	3.5	3.4	3.8	-----	-----	-----	3.55	4.3	4.15	3.85	4.05
3	3.4	3.5	3.35	3.7	-----	-----	-----	3.65	4.2	4.15	3.8	3.65
4	3.35	3.5	3.35	3.2	-----	-----	-----	3.8	4.2	4.15	3.75	3.6
5	3.35	3.45	3.5	3.3	-----	-----	-----	3.7	4.2	4.05	3.75	3.5
6	3.35	3.45	3.35	3.7	-----	-----	-----	3.65	4.15	3.9	3.6	3.5
7	3.4	3.45	3.5	3.9	-----	-----	-----	3.65	4.0	3.75	3.6	3.5
8	3.4	3.4	3.35	4.0	-----	-----	-----	3.75	3.9	3.7	3.65	3.5
9	3.4	3.4	3.35	4.0	-----	-----	-----	3.65	3.9	3.85	3.75	3.45
10	3.4	3.4	3.75	4.1	-----	-----	-----	3.6	4.1	3.85	3.8	3.4
11	3.4	3.4	3.95	4.1	-----	-----	-----	3.55	4.05	3.95	3.8	3.3
12	3.4	3.4	3.6	4.2	-----	-----	-----	3.45	4.1	4.0	3.7	3.3
13	3.75	3.4	3.3	-----	-----	-----	-----	3.45	4.0	3.9	3.7	3.4
14	4.9	3.6	3.9	-----	-----	-----	-----	3.45	4.15	3.95	3.6	3.35
15	3.8	3.55	4.7	-----	-----	-----	-----	3.5	4.2	4.0	3.6	3.4
16	3.5	3.4	4.35	-----	-----	-----	-----	3.5	4.3	3.95	3.55	3.4
17	3.5	3.4	4.3	-----	-----	-----	-----	3.5	4.1	3.85	3.55	3.4
18	3.4	3.7	4.4	-----	-----	-----	3.3	3.5	4.0	3.7	3.75	3.25
19	3.4	3.45	4.4	-----	-----	-----	3.5	3.55	4.05	3.7	3.9	3.2
20	3.4	3.8	5.0	-----	-----	-----	3.3	3.55	4.05	3.75	3.65	3.2
21	3.7	3.5	5.0	-----	-----	-----	3.3	3.55	4.0	3.75	3.6	3.2
22	3.8	3.55	4.95	-----	-----	-----	3.3	3.55	4.1	3.85	3.5	3.2
23	-----	3.5	4.8	-----	-----	-----	3.3	-----	4.1	3.9	3.5	3.25
24	3.4	3.5	4.8	-----	-----	-----	3.3	3.55	4.1	3.9	3.45	3.25
25	3.4	3.5	4.75	-----	-----	-----	3.35	3.65	4.1	3.8	3.45	3.3
26	3.4	3.6	4.0	-----	-----	-----	3.5	3.75	4.2	3.75	3.75	3.3
27	3.4	3.9	4.0	-----	-----	-----	3.5	3.85	4.1	3.65	3.55	3.25
28	3.4	3.95	4.1	-----	-----	-----	3.45	3.75	3.9	3.65	3.45	3.35
29	3.45	4.	4.9	-----	-----	-----	3.45	3.65	3.9	3.65	3.5	-----
30	3.75	3.7	4.9	-----	-----	-----	3.4	3.8	3.95	3.75	3.5	3.2
31	3.6	-----	4.9	-----	-----	-----	-----	4.0	-----	3.85	3.5	-----
1909-10.												
1	3.25	3.85	3.85	3.15	3.2	3.85	3.15	3.4	3.95	3.5	3.35	3.15
2	3.25	3.7	3.85	3.3	3.15	3.65	3.15	3.3	3.8	3.45	3.3	3.15
3	3.2	3.6	3.75	3.5	3.2	3.6	3.15	3.3	3.7	3.45	3.3	3.5
4	3.2	3.6	3.6	4.2	3.2	3.5	3.1	3.25	3.75	-----	3.3	3.35
5	3.2	3.25	3.5	4.95	3.3	3.4	3.1	3.25	3.7	3.45	3.3	3.2
6	3.3	3.25	3.65	4.9	3.2	3.35	3.1	3.3	3.7	3.5	3.3	3.1
7	3.25	3.25	3.5	4.8	3.15	3.3	3.15	3.35	3.6	3.7	3.3	3.1
8	3.2	3.2	3.5	4.7	3.1	3.3	3.2	3.45	3.5	3.6	3.4	3.05
9	3.2	3.2	3.45	4.6	3.1	3.3	3.2	3.55	3.55	3.6	3.3	-----
10	3.25	3.55	3.35	4.6	3.1	3.25	3.2	3.7	3.65	3.6	3.3	3.05
11	3.25	3.55	3.35	4.6	3.05	3.25	3.2	3.55	4.0	3.65	3.3	3.05
12	3.2	3.4	3.45	4.0	3.05	3.25	3.2	3.55	3.75	3.65	3.3	3.0
13	3.2	3.6	3.55	3.2	3.1	3.3	3.2	3.55	3.6	3.6	3.3	3.0
14	3.3	3.35	3.5	3.1	3.1	3.35	3.15	3.55	3.6	3.6	3.3	3.0
15	3.2	3.25	3.5	3.1	3.1	3.3	3.15	3.5	3.65	3.6	3.25	3.0
16	3.2	3.4	3.5	3.05	3.1	3.3	3.15	3.6	3.8	3.6	3.2	3.0
17	3.2	3.4	3.65	3.05	3.05	3.3	3.2	3.45	3.6	3.6	3.2	3.0
18	3.2	3.9	3.65	3.1	3.0	3.4	3.3	3.5	3.6	3.6	3.2	3.0
19	3.25	4.65	3.65	3.15	3.0	3.35	3.5	3.5	3.55	3.6	3.25	3.05
20	3.2	4.5	3.6	3.15	3.0	3.3	3.4	3.7	3.5	3.55	3.25	3.45
21	3.15	4.3	3.65	3.15	3.05	3.3	3.4	3.5	3.4	3.55	3.25	3.5
22	3.15	7.5	3.75	3.3	3.3	3.3	3.5	3.6	3.4	3.5	3.25	3.6
23	3.1	5.5	4.0	3.5	3.0	3.25	3.4	3.7	3.35	3.5	3.2	3.3
24	3.15	4.4	4.1	3.4	3.0	3.2	3.5	3.9	3.35	3.5	3.2	3.1
25	3.15	4.15	4.15	3.2	2.95	3.2	3.55	3.75	3.6	3.5	3.2	3.15
26	3.15	4.0	4.2	3.2	2.95	3.2	3.55	3.7	3.5	3.45	3.2	3.25
27	3.15	3.95	4.2	3.2	3.0	3.25	3.5	3.65	3.5	3.45	3.2	3.1
28	3.15	3.95	4.6	3.15	3.05	3.2	3.5	3.65	3.5	3.4	3.15	3.05
29	3.15	3.85	5.8	3.15	-----	3.15	3.45	3.7	3.5	3.4	3.1	3.1
30	3.2	3.85	5.8	3.15	-----	3.15	3.45	4.0	3.5	3.4	3.1	3.15
31	3.2	-----	3.15	3.15	-----	3.15	-----	3.85	-----	3.4	3.15	-----

NOTE.—Conditions were changed early in November, 1906, by washing out of dam below; this was replaced Nov. 28, and washed out again Dec. 3. Ice jam Dec. 1 and 13.

The creek was frozen Jan. 10 to 24, Nov. 18, 27, and Dec. 14 to 19, 1907.

Diversion dam of irrigating ditch began backing up water about May 3, 1907.

The creek was frozen wholly or in part on the following dates in 1908: Jan. 31 to Feb. 7, Feb. 11 to 13, and 21 to 23, Mar. 1 to 4, Oct. 21 and 22, Nov. 14, 15, and 26 to 30, Dec. 5 to 7, 10 to 12, and 14 to 31. Diversion dam for irrigating ditch was put in in the early part of April; it was washed out Apr. 19, and replaced during May and the first week in June.

Ice affected the gage heights Jan. 1 to 13 and Nov. 10 to 31, 1909. No observations Jan. 13 to Apr. 17, 1909, because the gage was out of plumb, due to the ice jam in January.

The rise in gage heights Jan. 2 to 13, 1910, and that of Feb. 22 were evidently due to shore and anchor ice.

Daily discharge, in second-feet, of Squaw Creek near Sisters, Oreg., for 1906-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1906.				1906.				1906.			
1.....	256	136	113	11.....	325	164	94	21.....	207	100	94
2.....	231	128	113	12.....	440	185	94	22.....	231	100	106
3.....	282	131	100	13.....	316	174	88	23.....	231	106	88
4.....	458	128	106	14.....	282	145	77	24.....	145	106	82
5.....	340	145	106	15.....	269	164	77	25.....	154	106	82
6.....	340	185	136	16.....	207	136	72	26.....	136	106	77
7.....	325	185	145	17.....	207	120	72	27.....	185	113	77
8.....	310	154	207	18.....	185	120	82	28.....	231	113	77
9.....	256	145	113	19.....	244	113	88	29.....	174	100	88
10.....	310	185	100	20.....	196	113	94	30.....	164	113	88
								31.....	154	100	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	113	58	.....	.....	90	116	87	.....	265	215	195	80
2.....	120	58	.....	.....	90	101	87	.....	252	228	195	80
3.....	120	58	.....	.....	90	101	87	.....	252	290	175	80
4.....	120	58	.....	.....	940	94	87	.....	240	240	165	92
5.....	77	58	.....	.....	890	94	87	.....	215	195	165	114
6.....	82	62	.....	.....	720	101	94	.....	205	195	175	106
7.....	77	570	.....	.....	410	101	101	.....	175	205	155	99
8.....	82	207	.....	.....	169	101	108	.....	175	228	155	92
9.....	77	54	.....	.....	189	101	107	.....	185	228	146	92
10.....	94	760	.....	.....	179	94	132	.....	195	240	138	106
11.....	88	520	.....	.....	169	101	116	.....	252	290	122	130
12.....	82	445	.....	.....	150	101	116	.....	195	265	106	121
13.....	77	840	.....	.....	150	94	116	.....	165	265	104	99
14.....	77	990	.....	.....	141	87	116	.....	138	205	102	80
15.....	77	375	.....	.....	132	87	124	.....	130	185	100	92
16.....	77	210	.....	.....	132	87	132	.....	121	195	98	92
17.....	82	150	.....	.....	132	87	132	.....	121	185	96	69
18.....	77	132	.....	.....	132	87	132	.....	138	165	94	64
19.....	77	124	.....	.....	132	87	132	.....	195	165	92	59
20.....	77	116	.....	.....	124	87	116	.....	215	175	90	59
21.....	77	101	.....	.....	124	87	116	.....	215	205	88	59
22.....	77	101	.....	.....	116	87	132	.....	175	195	86	59
23.....	82	101	.....	.....	124	87	132	.....	155	195	106	59
24.....	82	101	.....	.....	132	94	124	.....	146	205	138	59
25.....	82	87	.....	.....	132	87	124	.....	155	165	146	69
26.....	185	87	.....	.....	124	94	124	.....	175	195	121	59
27.....	106	87	.....	.....	116	87	124	.....	320	175	92	59
28.....	82	85	.....	.....	124	87	116	.....	240	185	92	59
29.....	77	85	.....	.....	.....	87	116	.....	215	185	80	59
30.....	67	85	.....	.....	.....	87	116	.....	215	205	80	64
31.....	67	.....	.....	.....	.....	87	.....	.....	185	86	.....	.....

Daily discharge, in second-feet, of Squaw Creek near Sisters, Oreg., for 1906-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1	59				75	66				173	163	80
2	59				75	67				183	154	80
3	64				75	68				205	154	80
4	69				75	69				205	136	98
5	69				75	70				205	145	112
6	74				75	70				205	136	105
7	69				75	70				183	145	105
8	69				76	70				281	145	74
9	69				76	70				242	145	74
10	69				70	70			120	242	145	74
11	69				72	70			163	229	120	86
12	69				73	76			173	281	112	98
13	86				74	82			173	255	128	98
14	69				76	82			217	229	112	98
15	80				76	320			205	217	112	92
16	69				76	335			205	183	136	86
17	69				76	180			183	183	120	74
18	69				76	144			163	173	128	74
19	69				76	135			145	183	136	80
20	69				76	112			128	194	128	86
21	69				74	104			120	194	128	86
22	69				73	104			112	217	112	74
23	69				72	96			128	194	112	68
24	69				70	96			128	183	98	63
25	69				70	89			163	173	86	58
26	64				70	119			183	154	86	58
27	64				65	82			145	145	86	58
28	64				65	82			136	145	86	63
29	86				65	89			145	154	74	63
30	64					76			163	136	68	63
31	64					76				154	74	
1908-9.												
1	63	74	63					101	195	175	148	86
2	58	74	63					101	245	208	148	185
3	63	74	58					116	220	208	139	116
4	58	74	58					139	220	208	131	108
5	58	68	58					123	220	185	131	94
6	58	68	58					116	208	156	108	94
7	63	68	58					116	175	131	108	94
8	63	63	58					131	156	123	126	94
9	63	63	58					116	156	148	131	88
10	63	63	56					108	195	148	139	82
11	63	63	55					101	185	166	139	71
12	63	63	54					88	195	175	123	71
13	105	63	53					88	175	156	123	82
14	370	63						88	208	166	108	76
15	112	63						94	220	175	108	82
16	74	63						94	245	166	101	82
17	74	63						94	195	148	101	82
18	63	98					71	94	175	123	131	66
19	63	68					94	101	185	123	156	60
20	63	112					71	101	185	131	116	60
21	63	74					71	101	175	131	108	60
22	63	80					71	101	195	148	94	60
23	63	74					71	101	195	156	94	60
24	63	74					71	101	195	156	88	66
25	63	74					76	116	195	139	88	71
26	63	72					94	131	220	131	131	71
27	63	70					94	148	195	116	101	66
28	63	68					88	131	156	116	88	76
29	68	67					88	116	156	116	94	68
30	105	65					82	139	156	131	94	60
31	86							175		148	94	

Daily discharge, in second-feet, of Squaw Creek near Sisters, Oreg., for 1906-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	66	144	253	84	93	253	84	132	284	155	122	84
2.....	66	123	253	83	84	194	84	112	238	144	112	84
3.....	60	108	223	83	93	180	84	112	208	144	112	155
4.....	60	108	180	82	93	155	76	102	223	144	112	122
5.....	60	66	155	82	112	132	76	102	208	144	112	93
6.....	71	66	148	81	93	122	76	112	208	155	112	76
7.....	66	66	142	80	84	112	84	122	180	208	112	76
8.....	60	60	135	80	76	112	93	144	155	180	132	68
9.....	60	60	129	79	76	112	93	168	168	180	112	68
10.....	66	61	122	78	76	102	93	208	194	180	112	68
11.....	66	62	122	78	68	102	93	168	300	194	112	68
12.....	60	63	144	77	68	102	93	168	223	194	112	60
13.....	60	64	178	77	76	112	93	168	180	180	112	60
14.....	71	65	155	76	76	122	84	168	180	180	112	60
15.....	60	66	155	76	76	112	84	155	194	180	102	60
16.....	60	82	155	68	76	112	84	180	238	180	93	60
17.....	60	82	.....	68	68	112	93	144	180	180	93	60
18.....	60	156	.....	76	60	132	112	155	180	180	93	60
19.....	66	340	.....	84	60	122	155	155	168	180	102	68
20.....	60	295	.....	84	60	112	132	208	155	168	102	144
21.....	55	245	.....	84	60	112	132	155	132	168	102	155
22.....	55	1,940	.....	112	60	112	155	180	132	155	102	180
23.....	50	915	.....	155	60	102	132	208	122	155	93	112
24.....	55	442	.....	132	60	93	155	268	122	155	93	76
25.....	55	352	.....	93	54	93	168	223	180	155	93	84
26.....	55	300	.....	93	54	93	168	208	155	144	93	102
27.....	55	284	.....	93	60	102	155	194	155	144	93	76
28.....	55	284	.....	84	68	93	155	194	155	132	84	68
29.....	55	253	.....	84	.....	84	144	208	155	132	76	76
30.....	60	253	.....	84	.....	84	144	300	155	132	76	84
31.....	60	.....	84	84	.....	84	.....	253	.....	132	84	.....

NOTE.—Daily discharge determined from rating curves applicable as follows:
 1906. July 1 to Nov. 10, fairly well defined below 300 second-feet; Nov. 11-27, based on an estimate.
 1907. Feb. 4 to Apr. 30, poorly defined; June 1 to Oct. 31, approximate.
 1908. Feb. 1 to Apr. 30, poorly defined; June 10 to Dec. 13, fairly well defined below 170 second-feet.
 1909-10. Apr. 18 to Nov. 21, 1909, fairly well defined below 160 second-feet; Nov. 22, 1909, to Sept. 30, 1910, well defined between 60 and 160 second-feet.

Monthly discharge of Squaw Creek near Sisters, Oreg., for 1908-1910.

[Not including McAllister's ditch.]

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908.					
June 10-30.....	217	112	157	6,540	B.
July.....	281	136	197	12,100	B.
August.....	163	68	120	7,380	B.
September.....	112	58	80.3	4,760	B.
The period.....				30,800	
1908-9.					
October.....	370	58	78.2	4,810	B.
November.....	112	63	70.9	4,220	B.
December 1-13.....	63	53	57.7	1,590	B.
April 18-30.....	94	71	80.2	2,070	B.
May.....	175	88	112	6,890	B.
June.....	245	156	194	11,500	B.
July.....	208	116	152	9,350	B.
August.....	156	88	116	7,130	B.
September.....	185	60	81.0	4,820	B.
1909-10.					
October.....	71	50	60.3	3,710	B.
November.....	1,940	60	247	14,700	C.
December.....	253	84	a 133	8,180	C.
January.....	155	68	86.3	5,310	C.
February.....	112	54	73.0	4,050	B.
March.....	253	84	118	7,260	A.
April.....	168	76	112	6,660	A.
May.....	300	102	173	10,600	A.
June.....	300	122	184	10,900	A.
July.....	208	132	163	10,000	A.
August.....	132	76	102	6,270	A.
September.....	180	60	86.9	5,170	A.
The year.....	1,940	50	128	92,800	

a Dec. 17-30, 1909, estimated at 100 second-feet on account of ice.

Monthly discharge of Squaw Creek near Sisters, Oreg., for 1906-1910.

[Including McAllister's ditch.]

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906.					
July.....	458	136	251	15,400	B.
August.....	185	100	133	8,200	B.
September.....	207	72	97.9	5,830	B.
1906-7.					
October.....	185	67	88.3	5,400	B.
November.....	990	58	226	13,400	C.
December.....			^a 109	6,700	C.
January.....			^a 90.0	5,530	C.
February.....	940	90	220	12,200	C.
March.....	116	87	92.9	5,710	B.
April.....	132	87	114	6,780	B.
May.....			^a 217	13,300	C.
June.....	320	121	195	11,600	B.
July.....	290	165	208	12,800	B.
August.....	195	80	122	7,500	C.
September.....	130	59	80.4	4,780	C.
The year.....			147	106,000	
1907-8.					
October.....	86	59	69.0	4,240	C.
November.....			^a 78.2	4,650	C.
December.....			^a 64.5	3,970	C.
January.....			^a 67.6	4,160	C.
February.....	76	65	73.2	4,210	C.
March.....	335	66	104	6,400	B.
April.....			^a 102	6,070	C.
May.....			^a 125	7,690	C.
June.....	239	134	^b 168	10,000	B.
July.....	297	152	213	13,100	B.
August.....	176	81	133	8,180	B.
September.....	122	68	90.3	5,370	B.
The year.....			107	78,000	
1908-9.					
October.....	378	66	86.2	5,300	B.
November.....	118	69	76.9	4,580	B.
December.....	63		^c 52.6	3,230	C.
January.....			^a 59.2	3,640	C.
February.....			^a 57.9	3,220	C.
March.....			^a 60.7	3,730	C.
April.....	98	74	78.4	4,670	B.
May.....	197	101	127	7,810	B.
June.....	272	173	216	12,900	B.
July.....	228	129	169	10,400	B.
August.....	173	99	129	7,930	B.
September.....	200	68	91.4	5,440	B.
The year.....			100	72,800	
1909-10.					
October.....	82	58	68.4	4,210	B.
November.....	1,960	69	255	15,200	C.
December.....	253	84	133	8,180	C.
January.....	155	68	86.3	5,310	C.
February.....	112	54	73.0	4,050	B.
March.....	253	84	118	7,260	A.
April.....	172	80	116	6,900	A.
May.....	310	112	183	11,300	A.
June.....	317	139	201	12,000	A.
July.....	226	146	178	10,900	A.
August.....	144	84	112	6,890	A.
September.....	188	66	95.0	5,650	A.
The year.....	1,960	54	135	97,800	

^a Estimated by comparisons with records of Tumalo Creek.^b June 1-9 estimated 120 second-feet.^c Dec. 14-31 estimated 49 second-feet.

M'ALLISTER'S DITCH NEAR SISTERS, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 30, T. 15 S., R. 10 E., about 100 yards below intake and below first spillway.

Records presented.—May 2 to November 22, 1909; June 29, 1910, to September 30, 1910.

Gage.—Vertical staff in the side of ditch above first spillway.

Channel.—Earth section; changes in a spillway below may affect gage.

Discharge measurements.—Made from a crosspiece of waste gate or by wading.

Winter flow.—Water shut off in freezing weather.

Accuracy.—Results only fair.

Discharge measurements of McAllister's ditch near Sisters, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1909. May 29	R. B. Post.....	Feet. 1.60	Sec.-ft. 17.4	1910. June 29 Sept. 16	L. R. Allen..... Allen and Davenport...	Feet. 1.31 .92	Sec.-ft. 13.7 6.2

Daily gage height, in feet, of McAllister's ditch near Sisters, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1909.							
1.....		1.8	1.6	1.5	1.3	1.15	1.6
2.....	1.5	1.95	1.7	1.5	1.5	1.15	1.5
3.....	1.5	1.9	1.7	1.4	1.4	1.1	1.45
4.....	1.6	1.9	1.7	1.4	1.35	1.1	1.45
5.....	1.6	1.9	1.6	1.4	1.35	1.1	1.25
6.....	1.55	1.85	1.6	1.35	1.35	1.2	1.2
7.....	1.5	1.80	1.5	1.3	1.4	1.1	1.2
8.....	1.6	1.8	1.5	1.4	1.35	1.1	1.2
9.....	1.5	1.75	1.65	1.5	1.3	1.1	1.2
10.....	1.5	1.9	1.65	1.55	1.3	1.15	1.55
11.....	1.45	1.9	1.7	1.55	1.2	1.15	1.55
12.....	1.4	1.9	1.7	1.5	1.2	1.15	1.45
13.....	1.4	1.7	1.65	1.5	1.3	1.15	1.55
14.....	1.4	1.75	1.7	1.45	1.25	1.3	1.2
15.....	1.4	1.8	1.7	1.45	1.3	1.15	1.1
16.....	1.4	2.0	1.65	1.3	1.3	1.15	1.3
17.....	1.4	1.8	1.6	1.3	1.3	1.15	1.3
18.....	1.4	1.7	1.55	1.45	1.2	1.15	1.2
19.....	1.45	1.7	1.5	1.6	1.2	1.2	1.25
20.....	1.55	1.65	1.55	1.4	1.2	1.15	1.2
21.....	1.4	1.6	1.55	1.45	1.15	1.1	1.15
22.....	1.4	1.7	1.6	1.4	1.15	1.1	1.9
23.....		1.7	1.6	1.35	1.2	1.1	
24.....	1.45	1.7	1.6	1.3	1.2	1.1	
25.....	1.5	1.7	1.5	1.3	1.2	1.1	
26.....	1.55	1.8	1.45	1.45	1.2	1.1	
27.....	1.7	1.7	1.4	1.3	1.2	1.1	
28.....	1.75	1.6	1.4	1.3	1.25	1.1	
29.....	1.6	1.6	1.4	1.3		1.1	
30.....	1.7	1.6	1.45	1.3	1.15	1.15	
31.....	1.8		1.5	1.3		1.15	

Daily gage height, in feet, of McAllister's ditch near Sisters, Oreg., for 1909-10—Contd.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1910.					1910.				
1.....		1.3	1.25	1.05	16.....		1.4	1.1	0.9
2.....		1.3	1.2	1.05	17.....		1.4	1.1	.9
3.....		1.3	1.2	1.3	18.....		1.4	1.1	1.0
4.....			1.2	1.2	19.....		1.4	1.2	1.0
5.....		1.3	1.2	1.1	20.....		1.35	1.2	1.3
6.....		1.4	1.2	1.0	21.....		1.35	1.15	1.15
7.....		1.5	1.2	1.0	22.....		1.35	1.15	1.0
8.....		1.45	1.25	.95	23.....		1.3	1.1	1.0
9.....		1.4	1.2		24.....		1.3	1.1	1.0
10.....		1.4	1.2	.95	25.....		1.3	1.1	1.0
11.....		1.4	1.2	.95	26.....		1.3	1.1	1.15
12.....		1.4	1.2	.9	27.....		1.3	1.1	1.05
13.....		1.4	1.2	.9	28.....		1.3	1.05	.9
14.....		1.4	1.2	.9	29.....		1.3	1.0	1.0
15.....		1.4	1.15	.9	30.....		1.35	1.0	1.1
					31.....		1.3	1.05	.....

Daily discharge, in second-feet, of McAllister's ditch near Sisters, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1909.							
1.....		22	17	15	11	8.4	17
2.....		15	26	20	15	8.4	15
3.....		15	25	20	13	13	7.6
4.....		17	25	20	13	12	7.6
5.....		17	25	17	13	12	7.6
6.....		16	24	17	12	12	9.3
7.....		15	22	15	11	13	7.6
8.....		17	22	15	13	12	7.6
9.....		15	21	18	15	11	7.6
10.....		15	25	18	16	11	8.4
11.....		14	25	20	16	9.3	9.3
12.....		13	25	20	15	9.3	8.4
13.....		13	20	18	15	11	8.4
14.....		13	21	20	14	10	11
15.....		13	22	20	14	11	8.4
16.....		13	27	18	11	11	8.4
17.....		13	22	17	11	11	8.4
18.....		13	20	16	14	9.3	8.4
19.....		14	20	15	17	9.3	9.3
20.....		16	18	16	13	9.3	8.4
21.....		13	17	16	14	8.4	7.6
22.....		13	20	17	13	8.4	7.6
23.....		14	20	17	12	9.3	7.6
24.....		14	20	17	11	9.3	7.6
25.....		15	20	15	11	9.3	7.6
26.....		16	22	14	14	9.3	7.6
27.....		20	20	13	11	9.3	7.6
28.....		21	17	13	11	10	7.6
29.....		17	17	13	11	9.2	7.6
30.....		20	17	14	11	8.4	8.4
31.....		22	.....	15	11	.....	8.4

Daily discharge, in second-feet, of McAllister's ditch near Sisters, Oreg., for 1909-10—Cont'd.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1910.					1910.				
1.....		14	12.5	8.6	16.....		16	9.5	5.9
2.....		14	11.5	8.6	17.....		16	9.5	5.9
3.....		14	11.5	14	18.....		16	9.5	7.6
4.....		14	11.5	11.5	19.....		16	11.5	7.6
5.....		14	11.5	9.5	20.....		15	11.5	14
6.....		16	11.5	7.6	21.....		15	10.5	10.5
7.....		18	11.5	7.6	22.....		15	10.5	7.6
8.....		17	12.5	6.8	23.....		14	9.5	7.6
9.....		16	11.5	6.8	24.....		14	9.5	7.6
10.....		16	11.5	6.8	25.....		14	9.5	7.6
11.....		16	11.5	6.8	26.....		14	9.5	10.5
12.....		16	11.5	5.9	27.....		14	9.5	8.6
13.....		16	11.5	5.9	28.....		14	8.6	5.9
14.....		16	11.5	5.9	29.....	14	14	7.6	7.6
15.....		16	10.5	5.9	30.....	15	14	7.6	9.5
					31.....		14	8.6	

NOTE.—Daily discharge for 1909 determined from rating curve fairly well defined between 15 and 25 second-feet; June 29 to Sept. 30, 1910, from fairly well defined curve.

Monthly discharge of McAllister's ditch near Sisters, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
May 2-31.....	22	13	15.4	916	B.
June.....	27	17	21.6	1,290	B.
July.....	20	13	16.8	1,030	B.
August.....	17	11	13.1	806	B.
September.....	15	8.4	10.4	619	C.
October.....	11	7.6	8.15	501	C.
November.....	25	0	8.18	487	C.
The period.....				5,650	
1910.					
July.....	18	14	15.1	928	B.
August.....	12.5	7.6	10.5	646	B.
September.....	14	5.9	8.07	480	B.
October.....	11.5	3.1	4.49	276	B.
November.....	6.6	2.2	3.42	204	B.
December.....	3.1	2.2	2.25	138	C.
The period.....				2,670	

CROOKED RIVER NEAR POST, OREG.

Location.—In sec. 7, T. 17 S., R. 21 E., 12 miles above Post and half a mile below mouth of North Fork of Crooked River, at a point locally known as "Stewarts grade," just below dam site of proposed reservoir.

Records presented.—November 9, 1909, to September 30, 1910.

Drainage area.—Indeterminate.

Gage.—Combination vertical staff and inclined staff. Vertical staff read at low water; datum lowered 1 foot October 22, 1909. All gage heights reduced to new datum.

Channel.—Rocks and bowlders; probably permanent.

Discharge measurements.—Made from cable at gage section. Conditions poor.

Winter flow.—Stream freezes and water sometimes flows over ice; discharge relation affected for two or three months each winter. Estimates of discharge during such periods have generally been made by comparison with records of the Prineville station.

Diversions.—A considerable and unknown quantity of water is diverted for irrigation above the station.

Accuracy.—Results only fair on account of unfavorable conditions.

Discharge measurements of Crooked River near Post, Oreg., in 1908-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1909.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 9	R. B. Post.....	1.15	53	Oct. 22	R. B. Post.....	1.00	57
1909.				1910.			
Feb. 17	.....do.....	4.60	1,300	Apr. 8	L. R. Allen.....	3.50	751
Apr. 6	.....do.....	3.35	811	May 31	Stevens and Allen.....	.76	35
June 11	.....do.....	1.10	57				

Daily gage height, in feet, of Crooked River near Post, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1			1.4	1.20	2.20	2.35	4.70	2.85	1.70	0.70	0.85	0.51
2			1.4	1.20	2.15	2.40	4.90	3.10	1.60	.75	.83	.60
3			1.25	1.20	2.00	2.30	5.00	3.45	1.50	.75	.80	.65
4			1.2	1.20	2.00	2.70	4.50	3.20	1.49	.75	.80	.65
5			1.2	1.20	1.75	3.10	4.10	2.85	1.48	.75	.80	.65
6			1.17	1.20	1.58	3.00	3.32	2.60	1.38	.80	.74	.91
7			1.18	1.20	1.58	2.80	3.10	2.40	1.30	.88	.70	.75
8			1.05	1.20	1.56	2.50	3.20	2.20	1.19	.90	.65	.71
9			1.05	1.20	1.55	2.30	3.20	2.35	1.14	.90	.63	.71
10		1.1	1.2	1.20	1.55	2.20	3.20	2.30	1.10	1.00	.60	.71
11		1.1	1.2	1.20	1.55	2.10	.....	2.10	1.10	1.17	.60	.71
12		1.1	1.2	1.20	1.55	2.00	.....	2.15	1.00	1.00	.59	.77
13		1.2	1.2	1.20	2.50	2.00	.....	2.10	1.00	.85	.60	.85
14		1.2	1.2	1.20	3.60	2.50	.....	2.00	.97	.83	.60	.85
15		1.2	1.2	1.20	3.70	3.10	.....	1.90	1.00	.82	.60	.85
16		1.2	1.2	1.20	4.00	3.90	.....	1.85	.97	.82	.60	.83
17		1.2	1.2	6.20	4.72	4.00	4.40	1.90	1.00	.80	.56	.81
18		1.2	1.2	5.72	3.70	3.50	3.95	1.83	1.10	.83	.53	.78
19		1.2	1.2	3.70	3.03	3.20	3.85	1.75	1.05	.82	.50	.80
20		1.2	1.2	4.45	2.60	3.00	3.90	1.67	1.00	.80	.46	.80
21		1.2	1.2	4.90	2.03	2.80	3.60	1.62	.97	.76	.43	.84
22		1.2	1.2	3.20	2.04	2.70	3.50	1.62	.95	.73	.43	.86
23		1.25	1.2	2.60	2.10	2.70	3.50	1.62	.90	.70	.43	.90
24		1.35	1.2	2.20	2.30	3.60	3.25	1.60	.85	.70	.43	.84
25		1.2	1.2	2.13	2.20	4.25	3.50	1.58	.80	.70	.43	.81
26		1.25	1.2	2.06	2.20	4.75	3.60	1.62	.78	.80	.43	.78
27		1.35	1.2	2.00	2.15	4.90	3.55	1.72	.75	.90	.42	.80
28		1.6	1.2	3.08	2.45	4.95	3.30	2.25	.73	.90	.43	.81
29		1.5	1.2	3.00	.....	5.10	3.12	1.98	.70	.90	.43	.78
30		1.5	1.2	2.75	.....	4.80	2.80	1.80	.70	.88	.43	.82
31		1.2	2.25	.....	4.25	.....	1.80	.....	.88	.43	.....

Daily gage height, in feet, of Crooked River near Post, Oreg., for 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	0.88	1.02	3.00	2.25	3.00	10.00	3.85	1.88			0.54	0.45
2	.93	1.04	3.25	2.25	2.80	8.70	3.90	1.95			.53	.45
3	.92	1.10	3.85	2.25	2.50	8.00	3.55	2.00	0.63		.52	.45
4	1.00	1.15	3.85	2.25	2.20	7.00	3.30	2.50	.63		.52	
5	1.00	1.16	3.85	2.25	2.20	6.80	3.40	2.20	.60		.50	
6	1.00	1.17	3.85	2.25	2.15	5.60	3.60	1.90	.57		.50	
7	1.00	1.19	3.85	2.25	2.10	5.40	3.50	1.90	.55		.49	
8	1.00	1.19	3.85	2.25	2.10	5.40	3.60	1.90	.50		.48	
9	1.00	1.20	3.85	2.25	2.10	5.40		1.95	.48		.47	
10	1.00	1.20	3.85	2.25	2.10	5.20	3.70	1.95	.50	0.50	.47	.58
11	1.00	1.20	3.85	2.25	2.15	5.30	3.55	1.88	.55	.50	.46	.62
12	1.00	1.20	3.85	2.25	2.20	5.60	3.55	1.80		.50	.46	.65
13	1.00	1.20	3.85	2.25	3.60	5.80	3.45	1.77		.50	.45	.70
14	1.00	1.22	3.85	2.25	4.55	6.00	3.00	1.70		.50	.43	.76
15	1.00	1.22	3.85	2.25	3.00	6.20		1.60		.52	.43	.78
16	1.00	1.25	3.85	2.25	2.80	6.30	2.90	1.50		.52	.42	.85
17	1.00	1.27	3.85	2.25	2.60	6.40	2.90	1.20	.40	.50	.42	.88
18	1.00	1.28	3.85	2.25		6.30	2.90	1.17	.40	.52	.40	.90
19	1.00	1.31	3.85	2.25	2.00	6.80	2.90	1.18	.40	.52	.40	.87
20	1.00	2.30	3.85	2.30	2.00	6.70	2.85	1.00	.40	.65	.40	.84
21		1.80	3.85	2.40	1.90	6.00	2.70	.95	.40	.70	.40	.80
22	1.00	7.20	3.85	3.80	1.90	6.30	2.65	1.00	.50	.85	.40	.80
23	1.00	7.50	3.85	5.60	1.90	6.15	2.40	.90	.60	.80	.40	.80
24	1.00	6.50	3.85	6.21	4.45	5.30	2.30	.90	.60	.70	.40	.79
25	1.00	4.19	3.85	3.20	6.00	5.00	2.25	.98	.60	.60	.41	.79
26	1.00	3.15	3.85	2.68	5.40	4.40	2.25	.88	.60	.58	.41	.78
27	1.00	2.50	3.85	2.66	6.15		2.10	.85	.59	.57	.41	.78
28	1.00	2.50	2.25	2.70	8.00	4.00	2.00	.95	.58	.55	.41	.79
29	1.00	2.70	2.25	2.55		3.70	1.88		.56	.55	.42	.80
30	1.00	2.85	2.25	2.60		3.55	1.88		.55	.54	.44	.80
31	1.00		2.25	4.40		3.65				.54	.44	

NOTE.—Anchor ice noted Nov. 29, 1908. River frozen Dec. 15 to 31, ice 14 inches thick.

Ice Jan. 1 to 19, Jan. 23 to about Feb. 12, and Dec. 3 to 31, 1909. Ice jam Jan. 18. Channel freezing over Jan. 23; frozen to bottom Jan. 28 and 30. Ice out on Dec. 28 and found 18 inches thick. Gage height to water surface was 2.25 feet, instead of 3.85 feet as reported on several days previous by observer.

River frozen over Jan. 1 to 21, Dec. 19 to 31, 1910, and possibly for short periods at other times; slush ice was occasionally present.

Daily discharge, in second-feet, of Crooked River near Post, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1			94	50	220	370	1,290	538	191	27	41	14
2			94	50	230	385	1,390	625	167	32	39	19
3			94	50	230	355	1,440	760	144	32	36	23
4			86	50	220	485	1,190	660	142	32	36	23
5			86	50	203	625	1,020	538	140	32	36	23
6			82	50	162	590	708	450	119	36	31	47
7			84	50	162	520	625	385	103	44	27	32
8			64	50	158	415	660	325	84	46	23	28
9			64	50	156	355	660	370	77	46	21	28
10		71	86	50	156	325	660	355	71	57	19	28
11		71	86	50	156	295	1,000	295	71	82	19	28
12		71	86	50	156	265	1,300	310	57	57	18	33
13		86	86	50	415	265	1,400	295	57	41	19	41
14		86	86	50	820	415	1,400	265	54	39	19	41
15		86	77	50	860	625	1,350	240	57	38	19	41
16		86	77	60	980	940	1,250	228	54	38	19	39
17		86	77	400	1,300	980	1,140	240	57	36	17	37
18		86	77	450	860	780	960	222	71	39	15	34
19		86	77	500	600	660	920	203	64	38	13	36
20		86	77	450	450	590	940	184	57	36	11	36
21		86	77	400	274	520	820	172	54	32	10	40
22		86	77	380	277	485	780	172	52	30	10	42
23		94	74	350	295	465	780	172	46	27	10	46
24		113	77	325	355	820	680	167	41	27	10	40
25		86	77	305	325	1,080	780	162	36	27	10	37
26		94	77	285	325	1,310	820	172	34	36	10	34
27		94	77	265	310	1,390	800	196	32	46	9	36
28		94	77	250	400	1,420	700	340	30	46	10	37
29		94	77	250		1,490	632	260	27	46	10	34
30		94	77	230		1,340	520	215	27	44	10	38
31			77	210		1,080		215		44	10	

Daily discharge, in second-feet, of Crooked River near Post, Oreg., for 1908-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	44	60	-----	-----	590	4,540	920	235	31	16	15	-----
2.....	49	63	-----	-----	520	3,530	940	252	26	15	15	-----
3.....	48	71	-----	-----	415	3,040	800	265	21	15	14	-----
4.....	57	78	-----	-----	325	2,440	700	415	21	15	14	-----
5.....	57	80	-----	-----	325	2,340	740	325	19	15	13	-----
6.....	57	82	-----	-----	310	1,740	820	240	17	14	13	-----
7.....	57	84	-----	-----	295	1,640	780	240	16	14	12	-----
8.....	57	84	-----	-----	295	1,640	820	240	13	14	12	-----
9.....	57	86	-----	-----	295	1,640	840	252	12	14	12	-----
10.....	57	86	-----	-----	295	1,540	860	252	13	13	12	-----
11.....	57	86	-----	-----	310	1,590	800	235	16	13	11	-----
12.....	57	86	-----	-----	325	1,640	800	215	15	13	11	-----
13.....	57	86	-----	-----	820	1,840	760	208	13	13	10	-----
14.....	57	89	-----	-----	1,220	1,940	590	191	12	13	10	-----
15.....	57	89	-----	-----	590	2,040	572	167	11	14	10	-----
16.....	57	94	-----	-----	520	2,090	555	144	9	14	9	-----
17.....	57	98	-----	-----	450	2,140	555	86	8	13	9	-----
18.....	57	100	-----	-----	358	2,090	555	82	8	14	8	-----
19.....	57	105	-----	-----	265	2,340	555	83	8	14	8	-----
20.....	57	355	-----	-----	265	2,290	538	57	8	23	8	-----
21.....	57	215	-----	-----	240	1,940	485	52	8	27	8	-----
22.....	57	2,560	-----	900	240	2,090	468	57	13	41	8	-----
23.....	57	2,740	-----	1,740	240	2,020	385	46	19	36	8	-----
24.....	57	2,190	-----	2,040	1,160	1,590	355	46	19	27	8	-----
25.....	57	1,060	-----	660	1,940	1,440	340	55	19	19	8	-----
26.....	57	642	-----	478	1,640	1,140	340	44	19	18	8	-----
27.....	57	415	-----	471	2,020	1,060	295	41	18	17	8	-----
28.....	57	415	-----	485	3,040	980	265	52	18	16	8	-----
29.....	57	380	-----	432	-----	860	235	47	17	16	9	-----
30.....	57	340	-----	450	-----	800	235	42	16	15	10	-----
31.....	57	-----	-----	1,140	-----	840	-----	36	-----	15	10	-----

NOTE.—Daily discharge determined from a rating curve fairly well defined between 30 and 1,500 second-feet. Discharge estimated by comparison with records at Prineville station Nov. 27 to Dec. 2 and Dec. 15-31, 1908, Jan. 1-23, Jan. 28 to Feb. 4, Apr. 11-16, and Nov. 29 and 30, 1909. Mean discharge Jan. 1-21, 1910, estimated as 100 second-feet.

Monthly discharge of Crooked River near Post, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
November 10-30.....	113	71	87.4	3,760	C.
December.....	94	64	80.2	4,930	C.
January.....	500	50	189	11,600	D.
February.....	1,300	156	395	21,900	C.
March.....	1,490	265	699	43,000	B.
April.....	1,440	520	954	56,800	B.
May.....	760	162	314	19,300	B.
June.....	191	27	73.9	4,400	B.
July.....	82	27	39.8	2,450	C.
August.....	41	9	18.9	1,160	D.
September.....	47	14	33.8	2,010	C.
The period.....	-----	-----	-----	171,000	-----
1909-10.					
October.....	57	44	56.0	3,440	C.
November.....	2,740	60	431	25,600	B.
December.....	-----	-----	^a 214	13,200	D.
January.....	2,040	-----	351	21,600	C.
February.....	3,040	240	690	38,300	C.
March.....	4,540	800	1,900	117,000	C.
April.....	940	235	597	35,500	B.
May.....	415	36	152	9,350	B.
June.....	31	8	15.4	916	B.
July.....	41	13	17.3	1,060	B.
August.....	15	8	10.3	633	B.
September.....	46	10	27.9	1,660	B.
The year.....	4,540	8	372	268,000	-----

^a Estimated from Prineville records.

CROOKED RIVER NEAR PRINEVILLE, OREG.

Location.—In sec. 36, T. 15 S., R. 15 E., about 5½ miles south of Prineville, near point from which diversion can be made to Agency Plains, north of lower Crooked River.

Records presented.—October 31, 1908, to September 30, 1910.

Drainage area.—Indeterminate.

Gage.—Vertical staff.

Channel.—Sand; somewhat shifting; control gravel and bowlders.

Discharge measurements.—At ordinary and flood stages made from a flume structure; at low water by wading above a riffle about half a mile above gage.

Winter flow.—Probably affected by ice during extremely cold weather.

Diversions.—A large and undetermined amount of diversion above station for irrigation.

Accuracy.—Results good.

Discharge measurements of Crooked River near Prineville, Oreg., in 1908-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 2	R. B. Post.....	0.70	62	Apr. 12	L. R. Allen.....	3.30	858
Dec. 28 ^a	.....do.....	.79	68	June 1 ^b	Stevens and Allen.....	.80	31.3
				July 9 ^b	L. R. Allen.....	.48	10.7
1909.				Sept. 10 ^b	Allen and Davenport..	.38	5.5
Feb. 23	.....do.....	1.60	281				
Apr. 12	.....do.....	3.72	1,290				
June 9	.....do.....	.74	74				
Oct. 29	.....do.....	.58	51				

^a Made through ice.

^b Made by wading.

Daily gage height, in feet, of Crooked River at Prineville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....			0.7		1.33	1.80	3.50	2.20	1.20	0.30	0.40	0.20
2.....			.7		1.33	2.00	4.60	2.20	1.15	.30	.40	.20
3.....		0.7	.7		1.43	2.50	4.80	2.40	1.10	.30	.41	.30
4.....		.7	.7		1.53	2.60	4.30	2.35	1.03	.22	.37	.28
5.....		.7	.7		1.43	2.80	3.60	2.40	.95	.25	.35	.30
6.....		.7	.7		1.43	2.40	3.10	2.20	.90	.30	.35	.30
7.....		.7	.7		1.13	2.10	2.70	2.00	.85	.35	.38	.30
8.....		.7	.7		1.33	1.95	2.50	1.90	.80	.30	.35	.50
9.....		.7	.7		1.23	1.83	3.20	1.74	.80	.80	.35	.45
10.....		.7	.7		1.08	1.75	3.25	1.70	.70	.50	.30	.40
11.....		.7	.7		1.13	1.70	3.40	1.65	.70	.45	.30	.48
12.....		.7	.7		1.13	1.50	3.70	1.50	.70	.65	.20	.30
13.....		.7			1.23	1.50	3.60	1.60	.70	.60	.23	.35
14.....		.7			2.03	1.70	4.30	1.50	.60	.52	.25	.40
15.....		.7			1.93	2.10	4.20	1.40	.55	.50	.27	.45
16.....		.7			1.83	2.80	4.05	1.32	.58	.48	.25	.45
17.....		.7			5.03	3.40	4.20	1.27	.60	.50	.25	.45
18.....		.7			3.93	3.40	3.80	1.40	.50	.50	.23	.40
19.....		.7			3.03	2.75	3.60	1.27	.50	.45	.20	.45
20.....		.7		2.15	2.53	2.60	3.25	1.20	.65	.45	.20	.45
21.....		.7		2.15	2.13	2.40	3.20	1.20	.65	.45	.20	.45
22.....		.7		2.00	1.83	2.30	2.95	1.10	.67	.45	.20	.45
23.....		.7		2.00	1.70	2.20	2.85	1.10	.60	.45	.20	.45
24.....		.7		1.93	1.60	2.50	2.82	1.10	.55	.30	.20	.45
25.....		.7		1.93	1.90	3.20	2.60	1.00	.50	.30	.20	.45
26.....		.7		1.73	1.85	3.80	3.05	.90	.45	.30	.17	.55
27.....		.7	.7	1.53	1.70	4.20	3.00	1.00	.43	.30	.17	.45
28.....		.7	.8	1.43	1.70	4.50	2.95	1.10	.40	.30	.17	.45
29.....		.7	.8	1.63		4.30	2.75	1.60	.36	.30	.17	.50
30.....		.7		1.63		4.10	2.45	1.40	.35	.36	.20	.45
31.....				1.43		4.40		1.30			.20	

NOTE.—River was frozen Dec. 13 to 31, 1908; Jan. 2 to 19 and Dec. 20 to 31, 1909; and Jan. 3, 1910; discharge relation affected by ice jams Jan. 22-24, 1910. Slush ice also reported occasionally.

Daily gage height, in feet, of Crooked River at Prineville, Oreg., for 1908-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.	0.50				3.2	9.4	3.3	2.0	0.8	0.46	0.40	0.35
2.	.50	0.60	1.92		2.4	9.4	3.35	2.0	.7	.45	.40	.36
3.	.50			1.4	2.0	7.9	3.2	2.0	.65	.45	.35	.37
4.	.50	.65	1.20		1.45	7.6	3.2	2.4	.65	.46	.35	.34
5.	.55			1.4	1.7	6.8		2.2	.6	.45	.30	.35
6.	.55	.70	1.50		1.7	5.9	3.2	2.1	.6	.45	.30	.34
7.	.58	.70		1.4	1.7	5.6	3.25	1.95	.55	.45	.30	.35
8.	.59	.73	1.70		1.6	5.5	3.2	1.9	.57	.45	.30	.36
9.	.59			1.4	1.7	5.1	3.2	1.85	.48	.46	.35	.36
10.	.59	.80	1.70		1.8	5.0	3.2	1.8	.5	.46	.35	.36
11.	.59		1.50	1.4	1.55	5.15	3.3	2.0	.5	.45	.30	.32
12.	.60	.80	1.52		1.5	5.4	3.3	2.1	.55	.45	.30	.30
13.		.85		1.4	1.6	5.45	3.1	1.9	.6	.42	.30	.32
14.	.60		1.70		4.0	5.6	3.0	1.7	.5	.40	.30	.35
15.	.60	1.30		1.4	3.0	5.7	2.8	1.65	.5	.40	.30	.40
16.			1.50		1.8	6.0	2.78	1.55	.7	.40	.30	.55
17.	.60	.70		1.4	1.7	6.0	2.6	1.45	.6	.38	.30	.60
18.	.60		1.40	1.4	1.7	6.0	2.55	1.3	.6	.38	.30	.75
19.	.60	.70		1.4	1.6	6.2	2.55	1.2	.6	.38	.30	.85
20.	.60		1.40	1.4	1.6	6.4	2.6	1.2	.6	.50	.35	.88
21.		1.60		1.4	1.5	5.9	2.6	1.1	.58	.44	.35	.87
22.	.60	1.45	1.40	2.4	1.4	5.9	2.5	1.1	.6	.40	.35	.87
23.		6.80		9.0	1.4	6.0	2.4	1.1	.6	.45	.35	.87
24.	.60	6.60	1.40	7.5	1.5	5.3	2.3	1.0	.57	.50	.35	.85
25.	.60	4.40	1.40	4.4	7.1	4.7	2.3	.9	.58	.65	.35	.85
26.		3.30		2.6	6.5	4.3	2.2	.85	.57	.55	.35	.80
27.	.60	2.50	1.40	2.2	5.2	4.1	2.2	.9	.55	.55	.35	.80
28.		2.00		2.2	6.7	3.9	2.1	.9	.5	.55	.35	.75
29.	.60		1.40	2.3		3.6	2.0	.9	.5	.50	.35	.75
30.	.60	1.90		2.3		3.25	1.95	.85	.48	.50	.35	.75
31.	.65		1.40	2.8		3.2		.85		.40	.35	

Daily discharge, in second-feet, of Crooked River near Prineville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.			65		194	350	1,150	510	160	28	35	22
2.			65		194	430	1,950	510	148	28	35	22
3.		65	65		224	650	2,130	600	135	28	36	28
4.		65	65		256	700	1,710	575	121	23	33	27
5.		65	65		224	800	1,210	600	106	25	32	28
6.		65	65		224	600	950	510	96	28	32	28
7.		65	65		142	470	750	430	88	32	34	28
8.		65	65		194	410	650	390	79	28	32	43
9.		65	65		168	362	1,000	329	79	79	32	39
10.		65	65		131	332	1,020	315	65	43	28	35
11.		65	65		142	315	1,100	298	65	39	28	41
12.		65	65		142	245	1,270	245	65	59	22	28
13.		65	65		168	245	1,210	280	65	53	24	32
14.		65	65		442	315	1,710	245	53	45	25	35
15.		65	65		402	470	1,630	215	51	43	26	39
16.		65		150	362	800	1,520	191	51	41	25	39
17.		65		250	2,350	1,100	1,630	178	53	43	25	39
18.		65		300	1,430	1,100	1,340	215	43	43	24	35
19.		65		400	915	775	1,210	178	43	39	22	39
20.		65		490	665	700	1,020	160	59	39	22	39
21.		65		490	482	600	1,000	160	59	39	22	39
22.		65		430	362	550	875	135	61	39	22	39
23.		65		430	315	510	825	135	53	39	22	39
24.		65		416	280	650	810	135	48	28	22	39
25.		65		402	390	1,000	700	115	43	28	22	39
26.		65		326	370	1,340	925	96	39	28	20	48
27.		65		256	315	1,630	900	115	37	28	20	39
28.		65		224	315	1,870	875	135	35	28	20	39
29.		65		290		1,710	775	280	32	28	20	43
30.		65				1,550	625	215	32	32	22	39
31.				224		1,100		185		35	22	

Daily discharge, in second-feet, of Crooked River near Prineville, Oreg., for 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	43	56	394	.....	1,000	9,080	870	310	31	8.8	7.0	6.0
2.....	43	53	398	.....	600	9,080	900	310	22	8.5	7.0	6.2
3.....	43	56	279	.....	430	6,390	813	310	18	8.5	6.0	6.4
4.....	43	59	160	.....	230	5,880	813	450	18	8.8	6.0	5.8
5.....	48	62	202	.....	315	4,560	813	376	15	8.5	5.0	6.0
6.....	48	65	245	.....	315	3,260	813	342	15	8.5	5.0	5.8
7.....	51	65	280	.....	315	2,880	842	295	12	8.5	5.0	6.0
8.....	52	69	315	.....	280	2,760	813	280	14	8.5	5.0	6.2
9.....	52	74	315	.....	315	2,800	813	265	9.4	8.8	6.0	6.2
10.....	52	79	315	.....	350	2,200	813	250	10	8.8	6.0	6.2
11.....	52	79	245	.....	262	2,360	870	310	10	8.5	5.0	5.4
12.....	53	79	252	.....	245	2,640	870	342	12	8.5	5.0	5.0
13.....	53	88	284	.....	280	2,700	763	280	15	7.6	5.0	5.4
14.....	53	136	315	.....	1,480	2,880	715	221	10	7.0	5.0	6.0
15.....	53	185	280	.....	900	3,000	621	207	10	7.0	5.0	7.0
16.....	53	125	245	.....	350	3,390	612	180	22	7.0	5.0	12
17.....	53	65	230	.....	315	3,390	532	155	15	6.6	5.0	15
18.....	53	65	215	.....	315	3,390	511	120	15	6.6	5.0	26
19.....	53	65	194	.....	280	3,670	511	98	15	6.6	5.0	38
20.....	53	172	.....	.....	280	3,950	532	98	15	10	6.0	41
21.....	53	280	.....	.....	245	3,260	532	78	14	8.2	6.0	40
22.....	53	230	.....	300	215	3,260	490	78	15	7.0	6.0	40
23.....	53	4,630	.....	2,510	215	3,390	450	78	15	8.5	6.0	40
24.....	53	4,330	.....	1,910	245	2,520	412	60	14	10	6.0	38
25.....	53	1,790	.....	845	5,110	1,910	412	44	14	18	6.0	38
26.....	53	1,050	.....	700	4,180	1,560	376	38	14	12	6.0	31
27.....	53	650	.....	510	2,520	1,400	376	44	12	12	6.0	31
28.....	53	430	.....	510	4,480	1,250	342	44	10	12	6.0	26
29.....	53	410	.....	550	.....	1,050	310	44	10	10	6.0	26
30.....	53	390	.....	550	.....	842	295	38	9.4	10	6.0	26
31.....	59	.....	.....	800	.....	813	.....	38	.....	7.0	6.0	.....

NOTE.—Daily discharge determined as follows: Nov. 3, 1908, to Feb. 28, 1910, from rating curve well defined below 1,300 second-feet; March to Sept. 30, 1910, from curve well defined below 1,000 second-feet. Discharge estimated, on account of ice, as follows: Dec. 13, 1908, to Jan. 15, 1909, 65 second-feet; Jan. 16-19, as noted; Dec. 20-31, 1909, 172 second-feet; Jan. 1-21, 1910, 108 second-feet; Jan. 22-25, reduced 50 per cent from open-channel values. Discharge interpolated for all other days on which gage was not read.

Monthly discharge of Crooked River near Prineville, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	.....	.....	a 40	2,460	C.
November.....	65	65	65	3,870	C.
December.....	.....	.....	a 65	4,000	C.
January.....	490	65	205	12,600	D.
February.....	2,350	131	421	23,400	A.
March.....	1,870	245	764	47,000	A.
April.....	2,130	625	1,150	68,000	A.
May.....	600	96	280	17,200	A.
June.....	160	32	68.8	4,090	A.
July.....	79	23	36.7	2,260	B.
August.....	36	20	26.0	1,600	C.
September.....	48	22	35.6	2,120	B.
The year.....	.....	.....	261	189,000	.....
1909-10.					
October.....	59	43	51.4	3,160	A.
November.....	4,630	53	530	31,500	C.
December.....	398	172	233	14,300	C.
January.....	2,510	108	369	22,700	D.
February.....	5,110	215	931	51,700	D.
March.....	9,080	813	3,260	200,000	D.
April.....	900	295	628	37,400	A.
May.....	450	38	187	11,500	A.
June.....	31	9.4	14.4	857	A.
July.....	18	6.6	8.91	548	A.
August.....	7.0	5.0	5.65	347	A.
September.....	41	5.0	18.6	1,110	A.
The year.....	9,080	5.0	519	375,000	.....

a Estimated.

OCHOCO CREEK AND ELLIOTT DITCH AT ELLIOTT'S RANCH, NEAR PRINEVILLE, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 5, T. 15 S., R. 17 E., at Elliott's ranch, 6 miles east of Prineville, at the dam site of a reservoir proposed in connection with the development of the Ochoco project of the United States Reclamation Service.

Records presented.—November 1, 1908, to April 30, 1910.

Drainage area.—300 square miles.

Gage.—Vertical staff. No change in gage datum since July 15, 1909, when the gage was lowered 0.75 foot. All gage heights corrected to later datum. Gage on Elliott ditch is vertical staff 150 feet upstream from gage in creek.

Channel.—Gravel.

Discharge measurements.—Made from a cable near the gage and from foot plank over ditch.

Winter flow.—Discharge relation not seriously affected by ice.

Diversions.—Elliott's ditch diverts water from the left bank of the creek about 1,000 feet above the gaging station. Records of the flow of the ditch are kept in order to determine the total flow past the gage. There are other diversions for irrigation farther up the creek.

Accuracy.—Rating curve and records good.

Discharge measurements of Ochoco Creek near Prineville, Oreg., in 1908–1912.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Dec. 27	R. B. Post.....	0.85	5.5	Apr. 11	L. R. Allen.....	1.90	178
1909.				May 10	.....do.....	1.90	187
Feb. 22	R. B. Post.....	1.28	66.3	Stevens and Allen.....	1.68	130	
Apr. 11	.....do.....	1.76	171	1912.			
June 9	.....do.....	1.00	26	Feb. 18	Howard Kimble.....	2.77	448
July 26	.....do.....	.4	1.2				
Oct. 8	.....do.....	.54	.06				

Daily gage height, in feet, of Ochoco Creek near Prineville, Oreg., for 1908–10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.			1.05	1.25	1.55	1.35	1.85	1.75	1.35		0.30	0.40
2.			.95	1.25	1.55	1.45	2.05	1.75	1.35		.40	.50
3.			1.05	1.05	1.55	1.45	2.15	1.65	1.25		.50	.40
4.			1.05	1.31	1.55	1.45	1.95	1.85	1.25		.40	.50
5.			.95	1.31	1.55	1.55	1.85	1.75	1.15		.50	.50
6.			.8		1.55	1.55	1.85	1.85	1.05		.50	.50
7.			.8		1.55	1.45	1.65	1.65	1.15		.50	.50
8.			.8		1.55	1.55	1.85	1.65	1.15		.50	.40
9.		0.95	.8		1.55	1.45	1.75	1.65	1.00		.50	.40
10.		.95	.8		1.55	1.35	1.85	1.65			.50	.40
11.		.95	.8		1.55	1.35	1.85	1.65	1.00		.50	.40
12.		.95	.8		1.55	1.15	1.85	1.55	.85		.50	.40
13.		.95	.95		1.55	1.35	1.95	1.55	.95		.50	.40
14.		.95	.95		1.55	1.55	2.05	1.45			.50	.40
15.		.85	.95	1.65	1.55	1.75	2.05	1.45	.85	0.60	.40	.40
16.		.8	1.05	1.65	1.65	1.85	2.15	1.45			.50	.40
17.		.8	.95	1.70	2.75	2.25	2.15	1.35	.95	.60	.40	.30
18.		.8	.95	1.95	1.65	1.85	2.05	1.35		.50	.40	.30
19.		.95	.95	2.05	1.65	1.75	1.95	1.35	1.05	.50	.40	.30
20.		.95	.75	2.30	1.55	1.75	1.75	1.35		.50	.40	.30
21.		.95	.75	2.35	1.45	1.65	1.85	1.25	1.05	.50	.40	.30
22.		.8	.75	1.65	1.25	1.65	1.75	1.25		.50	.40	.30
23.		.95	.75	1.55	1.45	1.75	1.85	1.25	1.05	.40	.40	.30
24.		.95	.75	1.55	1.35	1.85	1.75	1.25		.40	.40	.30
25.		.8	.85	1.35	1.35	1.85	1.75	1.25	.95	.40	.40	.30
26.		.8	.85	1.25	1.25	1.95	1.85	1.15		.40	.40	.30
27.		.8	.8	1.55	1.25	2.05	1.85	1.25	.95	.30	.40	.30
28.		.8	.8	1.55	1.45	2.15	1.85	1.35		.40	.40	.30
29.		.95	.8	1.55		2.15	1.75	1.35		.40	.40	.30
30.		.95	.8	1.55		2.05	1.75	1.25		.40	.40	.40
31.			.8	1.55		1.95		1.25		.40	.40	

Daily gage height, in feet, of Ochoco Creek near Prineville, Oreg., for 1908-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	0.30	0.30	1.70	1.5	1.8	2.85	2.1					
2.....	.30	.30	1.60	1.4	1.5	3.0	2.1					
3.....	.30	.30	1.60	2.0	1.5	3.15	2.0					
4.....	.30	.30	1.50	2.1	1.5	3.2	1.9					
5.....	.30	.30	1.60	2.1	1.6	3.15	2.0					
6.....	.30	.40	1.60	1.7	1.6	2.7	1.9					
7.....	.30	.40	1.70	1.7	1.5	2.5	1.9					
8.....	.40	.40	1.50	1.6	1.5	2.6	1.9					
9.....	.30	.40	1.70	1.5	1.5	2.7	1.8					
10.....	.30	.40	1.60	1.5	1.5	2.65	1.8					
11.....	.30	.30	1.50	1.6	1.5	2.75	1.9					
12.....	.30	.30	1.70	1.5	1.5	2.85	1.9					
13.....	.30	.40	1.60	1.5	1.6	2.9	1.9					
14.....	.40	.40	1.50	1.6	1.5	2.95	1.8					
15.....	.40	.50	1.50	1.4	1.4	2.85	1.8					
16.....	.40	.50	1.50	1.5	1.3	2.7	1.8					
17.....	.40	.40	1.50	1.5	1.4	2.7	1.8					
18.....	.40	.40	1.60	1.3	1.4	2.65	1.8					
19.....	.40	.40	1.50	1.2	1.5	2.8	1.6					
20.....	.40	.50	1.40	1.1	1.4	2.8	1.6					
21.....	.30	.60	1.60	1.4	1.2	2.75	1.6					
22.....	.30	1.80	1.60	1.9	1.3	2.95	1.6					
23.....	.30	4.25	2.60	2.7	1.4	2.75	1.8					
24.....	.30	3.40	2.60	2.4	2.6	2.75	1.4					
25.....	.30	2.50	2.30	2.0	1.7	2.7	1.4					
26.....	.30	2.20	2.20	1.8	1.5	2.5	1.4					
27.....	.30	2.00	2.20	1.8	1.5	2.4	1.4					
28.....	.30	1.90	2.20	1.7	2.1	2.3	1.3					
29.....	.30	1.90	2.10	1.5		2.3	1.3					
30.....	.30	1.90	2.00	1.6		2.2	1.3					
31.....	.30		1.50	2.0		2.2						

NOTE.—Ice present Dec. 20-30, 1908, and Jan. 6-15, 1909. Probably little or no ice in 1910. Water standing in pools Nov. 4-8, 1908.

Daily discharge, in second-feet, of Ochoco Creek near Prineville, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		0	32	6	109	75	170	148	75	17	0.0	0.5
2.....		0	22	15	109	92	221	148	75	16	.5	1.5
3.....		0	32	24	109	92	248	128	60	15	1.5	.5
4.....		0	32	33	109	92	195	170	60	14	.5	1.5
5.....		0	22	42	109	109	170	148	45	13	1.5	1.5
6.....		0	10	50	109	109	170	170	32	12	1.5	1.5
7.....		0	10	58	109	92	128	128	45	11	1.5	1.5
8.....		0	10	67	109	109	170	128	45	10	1.5	.5
9.....		22	10	76	109	92	148	128	26	9	1.5	.5
10.....		22	10	84	109	75	170	128	26	8	1.5	.5
11.....		22	10	92	109	75	170	128	26	7	1.5	.5
12.....		22	10	101	109	45	170	109	14	6	1.5	.5
13.....		22	6	110	109	75	195	109	22	5	1.5	.5
14.....		22	6	119	109	109	221	92	18	4	1.5	.5
15.....		14	6	128	109	148	221	92	14	3	.5	.5
16.....		10	6	128	128	170	248	92	18	3	1.5	.5
17.....		10	6	137	440	276	248	75	22	3	.5	.0
18.....		10	6	195	128	170	221	75	27	1.5	.5	.0
19.....		22	6	221	128	148	195	75	32	1.5	.5	.0
20.....		22	6	291	109	148	148	75	32	1.5	.5	.0
21.....		22	6	306	92	128	170	60	32	1.5	.5	.0
22.....		10	6	128	60	128	148	60	32	1.5	.5	.0
23.....		22	6	109	92	148	170	60	32	.5	.5	.0
24.....		22	6	109	75	170	148	60	27	.5	.5	.0
25.....		10	6	75	75	170	148	60	22	.5	.5	.0
26.....		10	6	60	60	195	170	45	22	.5	.5	.0
27.....		10	6	109	60	221	170	60	21	.0	.5	.0
28.....		10	6	109	92	248	170	75	20	.5	.5	.0
29.....		22	6	109		248	148	75	19	.5	.5	.0
30.....		22	6	109		221	148	60	18	.5	.5	.5
31.....			6	109		195		60		.5	.5	

Daily discharge, in second-feet, of Ochoco Creek near Prineville, Oreg., for 1908-1910—Con.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1909-10.												
1.....	0.0	0.0	137	100	158	475	234					
2.....	.0	.0	118	83	100	530	234					
3.....	.0	.0	118	208	100	588	208					
4.....	.0	.0	100	234	100	608	182					
5.....	.0	.0	118	234	118	588	208					
6.....	.0	.5	118	137	118	422	182					
7.....	.0	.5	137	137	100	354	182					
8.....	.5	.5	100	118	100	387	182					
9.....	.0	.5	137	100	100	422	158					
10.....	.0	.5	118	100	100	404	158					
11.....	.0	.0	100	118	100	440	182					
12.....	.0	.0	137	100	100	475	182					
13.....	.0	.5	118	100	118	493	182					
14.....	.5	.5	100	118	100	512	158					
15.....	.5	1.5	100	83	83	475	158					
16.....	.5	1.5	100	100	67	422	158					
17.....	.5	.5	100	100	83	422	158					
18.....	.5	.5	118	67	83	404	158					
19.....	.5	.5	100	52	100	457	118					
20.....	.5	1.5	83	38	83	457	118					
21.....	.0	3.0	118	83	52	440	118					
22.....	.0	158	118	182	67	512	118					
23.....	.0	1,050	387	422	83	440	158					
24.....	.0	688	387	321	387	440	83					
25.....	.0	354	291	208	137	422	83					
26.....	.0	262	262	158	100	354	83					
27.....	.0	208	262	158	100	321	83					
28.....	.0	182	262	137	234	291	67					
29.....	.0	182	234	100		291	67					
30.....	.0	182	208	118		262	67					
31.....	.0		100	208		262						

NOTE.—Daily discharge determined from rating curve fairly well defined between 20 and 600 second-feet.

Monthly discharge of Ochoco Creek near Prineville, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
November.....	22	0	10.0	595	C.
December.....	32	6	10.3	633	C.
January.....	306	6	107	6,580	C.
February.....	440	60	113	6,280	B.
March.....	276	45	135	8,300	B.
April.....	248	148	181	10,800	B.
May.....	170	45	97.5	6,000	B.
June.....	75	18	32.0	1,900	B.
July.....	17	.0	5.4	332	C.
August.....	1.5	.0	.87	53.5	C.
September.....	1.5	.0	.45	26.8	D.
The period.....				41,500	
1909-10.					
October.....	0.5	0.0	.13	8.0	D.
November.....	1,050	.0	109	6,490	C.
December.....	387	83	158	9,720	B.
January.....	422	38	143	8,790	B.
February.....	387	52	110	6,110	B.
March.....	608	262	431	26,500	B.
April.....	234	67	148	8,810	B.
The period.....				66,400	

NOTE.—These discharges do not include Elliott ditch.

Discharge measurements of Elliott ditch near Prineville, Oreg., in 1908-9.

Date.	Hydrographer.	Gage height.	Discharge.
1908. Nov. 3	R. B. Post.....	Feet. a 1.32	Sec.-ft. 2.9
1909. June 9	R. B. Post.....	1.15	4.8
July 26	.....do.....	1.25	2.5
Oct. 8	.....do.....	.55	.3

a Changed from 2.32 feet as formerly published, as recent study has shown that hydrographer's reading was probably 1.0 foot too high.

Daily gage height, in feet, of Elliott ditch near Prineville, Oreg., for 1908-1910.

Day.	1908, Nov.	1909								1910, Apr.
		Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	
1			1.5			1.1			0.8	
2			1.5						.8	
3	1.3		1.5						.8	
4	1.3		1.5						.9	
5	1.3		1.3	1.3					.9	
6	1.3			1.2					.9	
7	1.3			1.2					.9	
8	1.3			1.2					1.0	
9				1.15				0.6	1.0	
10								.7	1.0	
11								.6	1.0	
12				1.1				.6	1.0	
13				1.1				.5	1.0	
14								.6	1.0	1.0
15				1.0				.6	1.2	1.0
16								.6	1.0	1.0
17			1.3	1.2				.6	1.0	1.0
18			1.4					.6	1.0	1.1
19			1.5					.6	1.0	1.5
20			1.5					.6	1.1	1.5
21		1.4	1.4			1.1		.6	1.1	1.5
22		1.4	1.4			1.1		.6		1.5
23		1.5	1.4			1.3		.6		1.5
24		1.5	1.4			1.3		.6		1.4
25		1.5	1.4			1.3		.7		1.4
26		1.6	1.3			1.3		.7		1.3
27		1.6	1.3			1.1		.7		1.4
28		1.6	1.5			1.0		.7		1.8
29		1.6	1.3			1.0		.8		1.8
30		1.6	1.2			1.0		.8		1.8
31			1.3			1.0		.8		

NOTE.—Little, if any, water in ditch on days for which gage height is not given.

Daily discharge, in second-feet, of Elliott ditch near Prineville, Oreg., for 1908-1910.

Day.	1908, Nov.	1909.								1910, Apr.
		Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	
1.....	2.8	0.0	7.5	0.0	0.0	1.5	0.0	0.0	0.9	0.0
2.....	2.8	.0	7.5	.0	.0	.0	.0	.0	.9	.0
3.....	2.8	.0	7.5	.0	.0	.0	.0	.0	.9	.0
4.....	2.8	.0	7.5	.0	.0	.0	.0	.0	1.2	.0
5.....	2.8	.0	5.9	5.9	.0	.0	.0	.0	1.2	.0
6.....	2.8	.0	.0	5.2	.0	.0	.0	.0	1.2	.0
7.....	2.8	.0	.0	5.2	.0	.0	.0	.0	1.2	.0
8.....	2.8	.0	.0	5.2	.0	.0	.0	.0	1.5	.0
9.....	.0	.0	.0	4.8	.0	.0	.0	.4	1.5	.0
10.....	.0	.0	.0	.0	.0	.0	.0	.6	1.5	.0
11.....	.0	.0	.0	.0	.0	.0	.0	.4	1.5	.0
12.....	.0	.0	.0	4.5	.0	.0	.0	.4	1.5	.0
13.....	.0	.0	.0	4.5	.0	.0	.0	.2	1.5	.0
14.....	.0	.0	.0	.0	.0	.0	.0	.4	1.5	1.5
15.....	.0	.0	.0	3.8	.0	.0	.0	.4	2.2	1.5
16.....	.0	.0	.0	.0	.0	.0	.0	.4	1.5	1.5
17.....	.0	.0	5.9	5.2	.0	.0	.0	.4	1.5	1.5
18.....	.0	.0	6.7	.0	.0	.0	.0	.4	1.5	1.8
19.....	.0	.0	7.5	.0	.0	.0	.0	.4	1.5	3.8
20.....	.0	.0	7.5	.0	.0	.0	.0	.4	1.8	3.8
21.....	.0	6.7	6.7	.0	1.8	.0	.0	.4	1.8	3.8
22.....	.0	6.7	6.7	.0	1.8	.0	.0	.4	.0	3.8
23.....	.0	7.5	6.7	.0	2.7	.0	.0	.4	.0	3.8
24.....	.0	7.5	6.7	.0	2.7	.0	.0	.4	.0	3.2
25.....	.0	7.5	6.7	.0	2.7	.0	.0	.6	.0	3.2
26.....	.0	8.5	5.9	.0	2.7	.0	.0	.6	.0	2.8
27.....	.0	8.5	5.9	.0	1.8	.0	.0	.6	.0	3.2
28.....	.0	8.5	7.5	.0	1.5	.0	.0	.6	.0	6.0
29.....	.0	8.5	5.9	.0	1.5	.0	.0	.9	.0	6.0
30.....	.0	8.5	5.2	.0	1.5	.0	.0	.9	.0	6.0
31.....			5.9		1.5	.0		.9		

NOTE.—Daily discharge determined from rating curves applicable as follows: November, 1908, and July 20, 1909, to Apr. 30, 1910, fairly well defined; Apr. 21 to June 17, 1909, poorly defined.

Monthly discharge of Elliott ditch near Prineville, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
November..... 1908.	2.8	0	0.75	45	D.
April..... 1909.	8.5	0.0	2.61	155	D.
May.....	7.5	.0	4.30	264	D.
June.....	5.9	.0	1.48	88.1	D.
July.....	2.7	.0	.72	44.3	D.
August.....	1.5	.0	.05	3.1	D.
September.....	.0	.0	.00	.0	
October.....	.9	.0	.37	22.8	D.
November.....	2.2	.0	1.00	59.5	D.
The period.....				637	
April..... 1910.	6.0	.0	1.91	114	D.

METOLIUS RIVER AT ALLINGHAM RANGER STATION, NEAR SISTERS, OREG.

Location.—In sec. 3, T. 13 S., R. 9 E., about 17 miles northwest of Sisters, at Allingham ranger station, 3 miles below head of river, and 1½ miles below mouth of Lake Creek.

Records presented.—September 16 to September 30, 1910.

Drainage area.—50 square miles topographically tributary to the station; some water probably contributed from much larger area.

Gage.—Vertical staff on left bank, 100 yards below ranger station.

Channel.—Rock and gravel; practically permanent.

Discharge measurements.—Made by wading a short distance below the gage.

Winter flow.—Not affected by ice.

Diversions.—Above all diversions.

Cooperation.—Station maintained in cooperation with the United States Forest Service.

The following discharge measurement was made by Allen and Davenport:
September 15, 1910: Gage height, 0.59 foot; discharge, 377 second-feet.

Daily gage height, in feet, of Metolius River at Allingham ranger station, near Sisters, Oreg., for 1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1.....		11.....		21.....	
2.....		12.....		22.....	
3.....		13.....		23.....	
4.....		14.....		24.....	
5.....		15.....	0.59	25.....	
6.....		16.....		26.....	
7.....		17.....	.58	27.....	
8.....		18.....		28.....	0.57
9.....		19.....		29.....	.57
10.....		20.....		30.....	.58
				31.....	

METOLIUS RIVER AT HUBBARD'S RANCH, NEAR GRANDVIEW, OREG.

Location.—In sec. 34, T. 10 S., R. 10 E., about 20 miles from Grandview, 35 miles from Sisters, and 16 miles above the mouth of the river; 9 miles above the station at Riggs's ranch, and 2 miles below Whitewater Creek, the lowest large tributary.

Records presented.—April 24 to September 30, 1910.

Drainage area.—299 square miles topographically tributary to the station; some water probably contributed from a much larger area.

Gage.—Vertical staff on right bank.

Channel.—Gravel and bowlders; possibly shifting. Two channels below gage. Right channel carries about 10 second-feet.

Discharge measurements.—Made from a cable half a mile below the gage.

Diversions.—A few small private irrigation ditches take out above the station.

Cooperation.—Gage heights furnished by C. T. Hubbard.

Estimates withheld for additional data.

Daily gage height, in feet, of Metolius River at Hubbard's ranch, near Sisters, Oreg., for 1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		0.47	0.48	0.30	0.29	0.20	16.....		0.48	0.42	0.32	0.22	0.18
2.....		.49	.44	.31	.28	.20	17.....		.47	.39	.32	.21	.18
3.....		.49	.42	.31	.27	.20	18.....		.46	.36	.32	.21	.18
4.....		.48	.40	.32	.27	.20	19.....		.46	.40	.32	.22	.18
5.....		.44	.42	.33	.27	.19	20.....		.43	.35	.31	.22	.26
6.....		.44	.40	.34	.27	.18	21.....		.42	.35	.30	.21	.22
7.....		.46	.40	.34	.27	.18	22.....		.41	.36	.30	.20	.20
8.....		.48	.38	.33	.27	.18	23.....		.43	.34	.30	.20	.18
9.....		.52	.37	.35	.27	.18	24.....	0.56	.47	.32	.30	.20	.18
10.....		.66	.37	.35	.27	.18	25.....	.57	.50	.32	.30	.20	.18
11.....		.60	.48	.35	.28	.18	26.....	.58	.....	.32	.30	.20	.18
12.....		.54	.41	.36	.28	.18	27.....	.56	.43	.32	.30	.20	.18
13.....		.52	.38	.34	.27	.20	28.....	.52	.40	.30	.30	.20	.18
14.....		.50	.38	.32	.26	.18	29.....	.50	.42	.30	.30	.20	.18
15.....		.48	.36	.32	.25	.18	30.....	.50	.44	.30	.29	.20	.18
							31.....		.46	.....	.29	.20	.....

METOLIUS RIVER AT RIGGS'S RANCH, NEAR SISTERS, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 28, T. 11 S., R. 11 E., about 26 miles north of Sisters and 7 miles above the mouth of the river.

Records presented.—October 22, 1908, to September 30, 1910.

Drainage area.—347 miles topographically tributary.

Gage.—Vertical staff.

Channel.—Gravel and boulders; practically permanent.

Discharge measurements.—Made from cable 50 feet above gage section.

Winter flow.—Probably not affected by ice as stream is fed almost entirely by springs.

Diversions.—A few small private irrigation ditches divert water from river above the station. No storage developed.

Accuracy.—Results good.

Discharge measurements of Metolius River near Sisters, Oreg., in 1908–1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Oct. 22	R. B. Post.....	0.60	1,490	Apr. 15	L. R. Allen.....	0.89	1,760
				15	.....do.....	.89	1,800
1909.				June 28	.....do.....	.75	1,630
Apr. 17	R. B. Post.....	.74	1,600	Sept. 13	Allen and Davenport...	.60	1,480
Oct. 12	.....do.....	.55	1,410	13	R. W. Davenport.....	.62	1,550

Daily gage height, in feet, of Metolius River near Sisters, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		0.7	0.6	0.6	0.8	0.8	0.8	0.8	0.9	0.8	0.7	0.6
2.....		.6	.6	.6	.8	.8	.8	.8	1	.8	.7	.6
3.....		.6	.6	.6	.8	.8	.8	.8	1	.8	.7	.65
4.....		.6	.6	.6	.7	.8	.8	.9	1	.8	.7	.65
5.....		.6	.6	.6	.7	.8	.8	.85	1	.8	.7	.65
6.....		.6	.6	.6	.7	.8	.8	.8	.9	.8	.65	.65
7.....		.6	.6	.6	.7	.8	.8	.8	.9	.8	.65	.6
8.....		.6	.6	.6	.7	.8	.7	.8	.9	.8	.65	.6
9.....		.6	.6	.6	.7	.8	.7	.8	.8	.75	.65	.6
10.....		.6	.6	.6	.7	.8	.7	.8	.8	.75	.65	.6
11.....		.6	.6	.5	.7	.7	.7	.8	.8	.8	.65	.6
12.....		.6	.5	.5	.7	.7	.7	.8	.8	.8	.6	.6
13.....		.6	.5	.5	.7	.7	.7	.75	.85	.8	.65	.6
14.....		.6	.5	.5	.7	.7	.7	.75	.85	.75	.65	.6
15.....		.6	.5	.6	.7	.7	.7	.75	.9	.75	.65	.5
16.....		.6	.5	.8	1.0	.7	.7	.7	.9	.75	.65	.5
17.....		.6	.5	.8	1.0	.7	.75	.75	.9	.75	.65	.55
18.....		.8	.5	.9	1.0	.7	.75	.75	.9	.7	.6	.55
19.....		.7	.5	1.3	.9	.8	.75	.75	.85	.7	.6	.55
20.....		.8	.5	1.4	.9	.8	.75	.75	.85	.7	.6	.55
21.....		.7	.6	1.5	.9	.8	.75	.75	.85	.7	.6	.55
22.....	0.6	.7	.6	1.2	.8	.8	.75	.75	.85	.7	.6	.55
23.....	.6	.7	.6	1.1	.8	.8	.75	.75	.85	.7	.6	.55
24.....	.6	.6	.6	1.0	.8	.7	.75	.75	.85	.7	.6	.55
25.....	.6	.6	.6	.9	.8	.7	.75	.75	.8	.7	.6	.55
26.....	.6	.6	.6	.9	.8	.7	.75	.75	.8	.7	.8	.55
27.....	.6	.6	.6	.8	.8	.7	.75	.9	.8	.7	.7	.55
28.....	.6	.6	.7	.8	.8	.8	.8	.85	.8	.7	.6	.55
29.....	.9	.6	.6	.8		.8	.8	.8	.8	.7	.6	.6
30.....	.9	.6	.6	.8		.8	.8	.8	.8	.7	.6	.6
31.....	.7		.6	.8		.8		.9		.7	.6	
1909-10.												
1.....	.6	.6	1.1	.75	.8	1.7	.95	.9	.85	.75	.7	.6
2.....	.6	.8	1.0	.75	.8	1.9	.95	.9	.85	.75	.7	.6
3.....	.6	.7	.95	.7	.75	1.85	.95	.9	.85	.75	.7	.6
4.....	.6	.6	.95	.7	.75	1.7	.95	.85	.8	.75	.7	.6
5.....	.55	.6	.9	.7	.75	1.6	.95	.85	.8	.75	.7	.6
6.....	.6	.55	.9	.7	.75	1.5	.9	.85	.8	.75	.7	.6
7.....	.6	.55	.9	.7	.75	1.4	.9	.85	.8	.75	.7	.6
8.....	.55	.55	.85	.7	.75	1.3	.9	.85	.8	.75	.7	.6
9.....	.55		.85	.7	.75	1.3	.9	.85	.8	.75	.7	.6
10.....	.55	.55	.85	.7	.75	1.3	.9	1.1	.8	.75	.7	.6
11.....	.55	.55	.85	.7	.7	1.25	.9	1.0	.9	.75	.7	.6
12.....	.55	.55	1.2	.65	.7	1.2	.9	.95	.85	.75	.7	.6
13.....	.55	.5	1.0	.65	.7	1.2	.9	.95	.8	.75	.7	.6
14.....	.55	.5	1.0	.65	.7	1.2	.9	.95	.8	.75	.7	.6
15.....	.55	.5	1.0	.65	.7	1.2	.85	.9	.8	.75	.65	.6
16.....	.55	.5	1.0	.65	.7	1.2	.85	.9	.85	.75	.65	.6
17.....	.55	.5	.9	.65	.7	1.2	.85	.9	.85	.75	.65	.6
18.....	.55	.7	.85	.75	.7	1.2	.85	.9	.8	.75	.65	.6
19.....	.57	1.1	.85	.7	.7	1.2	.9	.9	.8	.75	.65	.6
20.....	.55	1.7	.85	.65	.7	1.2	.9	.85	.8	.75	.65	.65
21.....	.55	.8	.85	.7	.7	1.15	.9	.85	.8	.75	.65	.65
22.....	.55	2.65	.8	.9	.7	1.15	.9	.85	.75	.75	.65	.65
23.....	.55	2.8	.8	1.05	.7	1.1	.9	.85	.75	.75	.65	.6
24.....	.55	2.1	.8	1.0	.7	1.1	.95	.95	.75	.7	.65	.6
25.....	.5	1.65	.8	.9	.85	1.05	1.0	.95	.75	.7	.65	.6
26.....	.5	1.5	.8	.9	.8	1.05	1.0	.95	.75	.7	.65	.6
27.....	.5	1.5	.75	.85	.85	1.0	.95	.9	.75	.7	.6	.6
28.....		1.2	.75	.8	1.08	1.0	.95	.85	.75	.7	.6	.55
29.....	.5	1.1	.7	.8		1.0	.95	.85	.75	.7	.6	.55
30.....	.5	1.1	.8	.8		1.0	.9	.85	.75	.7	.6	.55
31.....	.6		.8	.8		.95		.85		.7	.6	

NOTE.—No ice.

Daily discharge, in second-feet, of Metolius River at Riggs's ranch, near Sisters, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		1,570	1,490	1,490	1,650	1,650	1,650	1,650	1,740	1,650	1,570	1,490
2.....		1,490	1,490	1,490	1,650	1,650	1,650	1,650	1,830	1,650	1,570	1,490
3.....		1,490	1,490	1,490	1,650	1,650	1,650	1,650	1,830	1,650	1,570	1,490
4.....		1,490	1,490	1,490	1,570	1,650	1,650	1,740	1,830	1,650	1,570	1,530
5.....		1,490	1,490	1,490	1,570	1,650	1,650	1,700	1,830	1,650	1,570	1,530
6.....		1,490	1,490	1,490	1,570	1,650	1,650	1,650	1,740	1,650	1,530	1,530
7.....		1,490	1,490	1,490	1,570	1,650	1,650	1,650	1,740	1,650	1,530	1,490
8.....		1,490	1,490	1,490	1,570	1,650	1,570	1,650	1,740	1,650	1,530	1,490
9.....		1,490	1,490	1,490	1,570	1,650	1,570	1,650	1,650	1,610	1,530	1,490
10.....		1,490	1,490	1,490	1,570	1,650	1,570	1,650	1,650	1,610	1,530	1,490
11.....		1,490	1,490	1,410	1,570	1,570	1,570	1,650	1,650	1,650	1,530	1,490
12.....		1,490	1,410	1,410	1,570	1,570	1,570	1,650	1,650	1,650	1,530	1,490
13.....		1,490	1,410	1,410	1,570	1,570	1,570	1,610	1,700	1,650	1,530	1,490
14.....		1,490	1,410	1,410	1,570	1,570	1,570	1,610	1,700	1,610	1,530	1,490
15.....		1,490	1,410	1,410	1,570	1,570	1,570	1,610	1,740	1,610	1,530	1,410
16.....		1,490	1,410	1,650	1,830	1,570	1,570	1,570	1,740	1,610	1,530	1,410
17.....		1,490	1,410	1,650	1,830	1,570	1,610	1,610	1,740	1,610	1,530	1,450
18.....		1,650	1,410	1,740	1,830	1,570	1,610	1,610	1,740	1,570	1,490	1,450
19.....		1,570	1,410	2,120	1,740	1,650	1,610	1,610	1,700	1,610	1,570	1,490
20.....		1,650	1,410	2,220	1,740	1,650	1,610	1,610	1,700	1,570	1,490	1,450
21.....		1,570	1,490	2,320	1,740	1,650	1,610	1,610	1,700	1,570	1,490	1,450
22.....	1,490	1,490	2,020	1,650	1,650	1,610	1,610	1,610	1,700	1,570	1,490	1,450
23.....	1,490	1,570	1,490	1,920	1,650	1,650	1,610	1,610	1,700	1,570	1,490	1,450
24.....	1,490	1,490	1,490	1,830	1,650	1,570	1,610	1,610	1,700	1,570	1,490	1,450
25.....	1,490	1,490	1,490	1,740	1,650	1,570	1,610	1,610	1,650	1,570	1,490	1,450
26.....	1,490	1,490	1,490	1,740	1,650	1,570	1,610	1,610	1,650	1,570	1,650	1,450
27.....	1,490	1,490	1,490	1,650	1,650	1,570	1,610	1,740	1,650	1,570	1,570	1,450
28.....	1,490	1,490	1,570	1,650	1,650	1,650	1,650	1,700	1,650	1,570	1,490	1,450
29.....	1,740	1,490	1,490	1,650	.....	1,650	1,650	1,650	1,650	1,570	1,490	1,490
30.....	1,740	1,490	1,490	1,650	.....	1,650	1,650	1,650	1,650	1,570	1,490	1,490
31.....	1,570	.....	1,490	1,650	.....	1,650	.....	1,740	.....	1,570	1,490	.....
1909-10.												
1.....	1,490	1,490	1,920	1,610	1,650	2,540	1,780	1,740	1,700	1,610	1,570	1,490
2.....	1,490	1,650	1,830	1,610	1,650	2,770	1,780	1,740	1,700	1,610	1,570	1,490
3.....	1,490	1,570	1,780	1,570	1,610	2,710	1,780	1,740	1,700	1,610	1,570	1,490
4.....	1,490	1,490	1,780	1,570	1,610	2,540	1,780	1,700	1,650	1,610	1,570	1,490
5.....	1,450	1,490	1,740	1,570	1,610	2,430	1,780	1,700	1,650	1,610	1,570	1,490
6.....	1,490	1,450	1,740	1,570	1,610	2,320	1,740	1,700	1,650	1,610	1,570	1,490
7.....	1,490	1,450	1,740	1,570	1,610	2,220	1,740	1,700	1,650	1,610	1,570	1,490
8.....	1,450	1,450	1,700	1,570	1,610	2,120	1,740	1,700	1,650	1,610	1,570	1,490
9.....	1,450	1,450	1,700	1,570	1,610	2,120	1,740	1,700	1,650	1,610	1,570	1,490
10.....	1,450	1,450	1,700	1,570	1,610	2,120	1,740	1,920	1,650	1,610	1,570	1,490
11.....	1,450	1,450	1,700	1,570	1,570	2,070	1,740	1,830	1,740	1,610	1,570	1,490
12.....	1,450	1,450	2,020	1,530	1,570	2,020	1,740	1,780	1,700	1,610	1,570	1,490
13.....	1,450	1,410	1,830	1,530	1,570	2,020	1,740	1,780	1,650	1,610	1,570	1,490
14.....	1,450	1,410	1,830	1,530	1,570	2,020	1,740	1,780	1,650	1,610	1,570	1,490
15.....	1,450	1,410	1,830	1,530	1,570	2,020	1,700	1,740	1,650	1,610	1,530	1,490
16.....	1,450	1,410	1,830	1,530	1,570	2,020	1,700	1,740	1,700	1,610	1,530	1,490
17.....	1,450	1,410	1,740	1,530	1,570	2,020	1,700	1,740	1,700	1,610	1,530	1,490
18.....	1,450	1,570	1,700	1,610	1,570	2,020	1,700	1,740	1,650	1,610	1,530	1,490
19.....	1,450	1,920	1,700	1,570	1,570	2,020	1,740	1,740	1,650	1,610	1,530	1,490
20.....	1,450	2,540	1,700	1,530	1,570	2,020	1,740	1,700	1,650	1,610	1,530	1,490
21.....	1,450	1,650	1,700	1,570	1,570	1,970	1,740	1,700	1,650	1,610	1,530	1,530
22.....	1,450	3,700	1,650	1,740	1,570	1,970	1,740	1,700	1,610	1,610	1,530	1,530
23.....	1,450	3,890	1,650	1,880	1,570	1,920	1,740	1,700	1,610	1,610	1,530	1,490
24.....	1,450	3,010	1,650	1,830	1,570	1,920	1,780	1,780	1,610	1,570	1,530	1,490
25.....	1,410	2,480	1,650	1,740	1,700	1,880	1,830	1,780	1,610	1,570	1,530	1,490
26.....	1,410	2,320	1,650	1,740	1,650	1,880	1,830	1,780	1,610	1,570	1,530	1,490
27.....	1,410	2,320	1,610	1,700	1,700	1,830	1,780	1,740	1,610	1,570	1,490	1,490
28.....	1,410	2,020	1,610	1,650	1,920	1,830	1,780	1,700	1,610	1,570	1,490	1,450
29.....	1,410	1,920	1,570	1,650	.....	1,830	1,780	1,700	1,610	1,570	1,490	1,450
30.....	1,410	1,920	1,650	1,650	.....	1,830	1,740	1,700	1,610	1,570	1,490	1,450
31.....	1,490	.....	1,650	1,650	.....	1,780	.....	1,700	.....	1,570	1,490	.....

NOTE.—Daily discharge determined from rating curve well defined between 1,400 and 2,000 second-feet.

Monthly discharge of Metolius River at Riggs's ranch, near Sisters, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October 22-31.....	1,740	1,490	1,550	30,700	A.
November.....	1,650	1,490	1,510	89,800	A.
December.....	1,570	1,410	1,470	90,400	A.
January.....	2,320	1,410	1,650	101,000	A.
February.....	1,830	1,570	1,640	91,100	A.
March.....	1,650	1,570	1,620	99,600	A.
April.....	1,650	1,570	1,610	95,800	A.
May.....	1,740	1,570	1,640	101,000	A.
June.....	1,830	1,650	1,710	102,000	A.
July.....	1,650	1,570	1,610	99,000	A.
August.....	1,650	1,490	1,530	94,100	A.
September.....	1,530	1,410	1,470	87,500	A.
The period.....				1,080,000	
1909-10.					
October.....	1,490	1,410	1,450	89,200	A.
November.....	3,890	1,410	1,870	111,000	A.
December.....	2,020	1,570	1,730	106,000	A.
January.....	1,880	1,530	1,610	99,000	A.
February.....	1,920	1,570	1,610	89,400	A.
March.....	2,770	1,780	2,090	129,000	A.
April.....	1,830	1,700	1,750	104,000	A.
May.....	1,920	1,700	1,740	107,000	A.
June.....	1,740	1,610	1,650	98,200	A.
July.....	1,610	1,570	1,600	98,400	A.
August.....	1,570	1,490	1,540	94,700	A.
September.....	1,530	1,450	1,490	88,700	A.
The year.....	3,890	1,410	1,680	1,210,000	

HOOD RIVER BASIN.

GENERAL FEATURES.

Hood River is formed by the junction of East, Middle, and West forks, which drain the eastern and northern slopes of Mount Hood, and flows northeastward into Columbia River at Hood River. The stream is used for both water power and irrigation, and, being supplied from the glaciers on the mountain, the flow is well maintained through the summer months.

The basin is heavily forested, though part of the area was burned many years ago. The mean annual precipitation at Hood River is 36 inches. The valley of the stream is noted for its production of apples, berries, and other fruit.

HOOD RIVER AT WINANS, OREG.

Location.—In sec. 1, T. 1 N., R. 9 E., 300 feet below the junction of the East and West forks, half a mile from Winans, $4\frac{1}{2}$ miles above Tucker's bridge, and $10\frac{1}{2}$ miles above Hood River.

Records available.—November 17, 1905, to March 16, 1907; January 16 to September 30, 1910.

Drainage area.—252 square miles.

Gage.—Staff in two sections on right bank; lower section inclined, upper vertical. Datum of gage prior to January 16, 1910, 0.50 foot lower than present.

Channel.—Coarse gravel and bowlders; not likely to shift.

Discharge measurements.—Made from cable near gage.

Diversions.—Several canals divert water for irrigating small tracts above the station, and at least one diverts around the station.

Storage.—A logging splash dam on West Fork was operated during 1906 and 1907, causing irregular rate of flow.

Accuracy.—Results fair.

Discharge measurements of Hood River at Winans, Oreg., in 1905, 1906, and 1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 17	L. R. Allen.....	0.57	493	Aug. 29	L. R. Allen.....	0.77	571
Dec. 23	do.....	1.03	767	Oct. 20	J. C. Stevens.....	1.17	899
				Dec. 15	H. McGlashan.....	1.20	864
1906.				1910.			
Mar. 9	P. A. Cupper.....	1.90	1,360	July 26	Ebert and Davenport..	.30	638
May 22 ^a	L. R. Allen.....	1.31	702				
July 8	do.....	1.52	1,160				

^a Not reliable, as débris was lodged against gage.

Daily gage height, in feet, of Hood River at Winans, Oreg., for 1905-1907, 1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....			0.7	0.9	1.6	1.8	1.9	2.0	1.3	1.5	1.0	0.7
2.....			.7	1.0	1.6	1.7	1.8	2.0	1.3	1.5	1.0	.7
3.....			.7	1.0	1.5	1.6	1.7	1.9	1.4	1.6	1.0	.7
4.....			.7	1.0	1.5	1.6	1.6	1.9	1.4	1.6	1.0	.7
5.....			.8	1.1	1.4	1.5	1.9	1.9	1.4	1.7	1.0	.7
6.....			.8	1.2	1.4	1.6	2.0	1.9	1.5	1.7	1.0	.7
7.....			.9	1.3	1.3	1.7	2.4	1.9	1.5	1.7	1.0	.7
8.....			.9	1.3	1.2	1.9	2.4	1.8	1.6	1.6	1.0	.7
9.....			1.0	1.4	1.1	1.9	2.2	1.8	1.6	1.5	1.0	.7
10.....			1.0	1.5	1.1	1.8	2.1	1.8	1.6	1.4	1.0	.7
11.....			1.0	1.1	1.0	1.6	2.0	1.7	1.6	1.3	1.0	.7
12.....			.9	1.1	1.0	1.6	1.9	1.7	1.6	1.3	1.0	.7
13.....			.8	1.1	1.0	1.6	1.9	1.7	1.7	1.3	1.0	.7
14.....			.7	1.0	1.0	1.6	1.8	1.7	1.8	1.3	1.0	1.2
15.....			.7	1.0	1.0	1.5	1.8	1.7	1.8	1.3	1.0	1.3
16.....			.7	1.1	1.0	1.5	1.8	1.6	2.0	1.3	.9	1.0
17.....			1.8	1.2	1.3	1.5	1.9	1.6	1.9	1.3	.9	.7
18.....			1.6	1.3	3.0	1.6	1.9	1.5	1.7	1.3	.9	.6
19.....		1.5	1.6	1.0	3.0	1.6	2.0	1.5	1.7	1.3	.8	.7
20.....		1.0	1.4	.9	3.0	1.5	2.1	1.5	1.7	1.3	.8	.7
21.....		.8	1.2	.9	2.9	1.5	2.2	1.5	1.6	1.3	.8	.7
22.....		.8	1.2	1.2	2.8	1.5	2.2	1.4	1.6	1.2	.7	.7
23.....		.8	1.0	1.4	2.4	1.5	2.1	1.4	1.6	1.2	.7	.7
24.....		.7	.8	2.9	2.3	1.5	2.0	1.4	1.6	1.1	.7	.7
25.....		.7	.7	2.0	2.2	1.5	2.0	1.5	1.6	1.1	.7	.7
26.....		1.3	1.7	1.8	2.2	1.5	2.0	1.5	1.6	1.0	.7	.7
27.....		1.0	1.6	1.8	2.0	1.5	2.0	1.5	1.6	.9	.7	.7
28.....		.9	1.5	1.6	1.9	1.5	2.0	1.5	1.6	.9	.7	.7
29.....		.8	1.3	1.7	.....	1.6	2.0	1.4	1.6	1.0	.7	.7
30.....		.7	1.0	1.7	.....	2.0	2.0	1.4	1.6	1.0	.7	.7
31.....			.8	1.7	.....	2.5	.....	1.4	.....	1.0	.7	.....

Daily gage height, in feet, of Hood River at Winans, Oreg., for 1905-1907, 1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1	0.7	1.3	1.1	2.0	2.0	2.2						
2	.7	1.0	1.2	2.0	2.0	2.1						
3	.7	.9	1.3	3.0	2.0	2.0						
4	.7	.9	1.3	2.6	3.0	2.0						
5	.7	.9	1.4	2.4	5.4	2.0						
6	.7	.8	1.4	2.2	4.6	2.0						
7	.7	.8	1.5	2.0	4.0	1.9						
8	.7	.8	1.5	2.0	3.6	1.9						
9	.7	.8	1.5	1.8	3.0	1.9						
10	.7	.9	1.4	1.7	2.9	1.9						
11	2.0	2.5	1.4	1.7	2.7	1.9						
12	2.2	4.5	1.3	1.6	2.5	1.8						
13	2.0	6.4	1.2	1.4	2.4	1.7						
14	2.0	6.5	1.2	1.2	2.2	1.6						
15	1.9	6.4	1.2	1.2	2.0	1.5						
16	1.8	3.7	1.2	1.2	2.0	1.4						
17	1.7	3.4	1.3	1.2	2.2							
18	1.5	2.7	1.4	1.2	2.2							
19	1.4	2.4	1.6	1.2	2.2							
20	1.4	2.2	6.6	1.2	2.3							
21	1.4	2.0	4.6	1.2	2.3							
22	1.4	2.0	3.6	1.2	2.3							
23	2.0	1.8	3.6	1.2	2.3							
24	2.0	1.7	3.4	1.2	2.5							
25	1.9	1.5	3.3	1.2	2.6							
26	1.8	1.5	3.0	1.2	2.4							
27	1.8	1.4	2.4	1.2	2.2							
28	1.7	1.4	2.2	1.2	2.2							
29	1.6	1.2	2.2	1.2	2.2							
30	1.5	1.2	2.2	2.4								
31	1.4		2.2	2.2								
1910.												
1					1.8	5.1	1.7	1.2	0.9	0.5	0.3	0.0
2					1.5	5.2	1.9	1.4	1.0	.5	.3	.0
3					1.4	4.7	1.9	1.7	.8	.5	.3	.0
4					1.3	4.2	1.8	2.1	.8	.5	.3	.0
5					1.1	3.1	1.6	2.2	.8	.5	.2	.0
6					1.1	2.9	1.6	1.9	.7	.6	.2	.1
7					1.1	2.9	1.7	1.8	.6	.5	.2	.1
8					.9	2.8	2.0	1.7	.7	.5	.2	.1
9					.9	2.5	1.9	1.8	.7	.5	.2	.1
10					.9	2.3	1.7	2.1	.8	.6	.3	.1
11					.8	2.2	1.8	2.0	.9	.6	.3	.1
12					.8	2.2	1.7	1.8	1.0	.6	.3	.1
13					1.5	2.1	1.7	1.8	.9	.5	.3	.0
14					1.1	2.1	1.5	1.7	.8	.5	.3	.0
15					1.0	2.5	1.4	1.5	.8	.5	.3	.1
16				.9	.9	2.5	1.4	1.4	.6	.5	.3	.1
17				2.0	1.0	2.7	1.6	1.4	.6	.5	.3	.2
18				1.1	.9	2.5	1.6	1.4	.6	.4	.3	.2
19				1.0	.9	2.5	1.7	1.2	.7	.4	.3	.2
20				.8	1.0	2.5	1.8	1.2	.6	.4	.3	.1
21				.8	.9	2.5	1.8	1.3	.6	.4	.3	.1
22				1.9	.9	2.2	1.8	1.3	.6	.4	.3	.1
23				3.1	.8	2.2	2.0	1.2	.5	.3	.3	.1
24				3.0	.9	2.1	2.1	1.3	.5	.3	.3	.1
25				2.2	1.1	1.9	2.2	1.1	.5	.3	.3	.1
26				1.9	1.7	2.0	2.3	1.1	.6	.3	.3	.1
27				1.7	2.6	1.7	2.2	1.1	.5	.3	.3	.1
28				1.7	3.1	1.7	2.0	1.1	.5	.3	.2	.1
29				1.6		1.6	1.8	1.0	.5	.3	.2	.1
30				1.6		1.6	1.4	1.1	.6	.3	.1	.1
31				2.0		1.7		1.1		.3	.1	

NOTE.—From March to June, 1906, there was more or less backwater, caused by debris. The flow is influenced by logging dams about 2 miles above the station. These gage heights represent only approximately the daily means.

Gage heights for 1910 refer to a datum 0.5 foot higher than that used in 1905 to 1907. No ice at this station.

Daily discharge, in second-feet, of Hood River at Winans, Oreg., for 1905-1907, 1910-
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.												
1					1,860	5,370	1,770	1,320	1,080	770	635	450
2					1,590	5,500	1,950	1,500	1,160	770	635	450
3					1,500	4,890	1,950	1,770	1,000	770	635	450
4					1,410	4,320	1,860	2,150	1,000	770	635	450
5					1,240	3,150	1,680	2,200	1,000	770	570	450
6					1,240	2,950	1,680	1,950	920	840	570	510
7					1,240	2,950	1,770	1,860	840	770	570	510
8					1,080	2,850	2,050	1,770	920	770	570	510
9					1,080	2,550	1,950	1,860	920	770	570	510
10					1,080	2,350	1,770	2,150	1,000	840	635	510
11					1,000	2,250	1,860	2,050	1,080	840	635	510
12					1,000	2,250	1,770	1,860	1,160	840	635	510
13					1,590	2,150	1,770	1,860	1,080	770	635	450
14					1,240	2,150	1,590	1,770	1,000	770	635	450
15					1,160	2,550	1,500	1,590	1,000	770	635	510
16				1,080	1,080	2,550	1,500	1,500	840	770	635	510
17				2,050	1,160	2,750	1,680	1,500	840	770	635	570
18				1,240	1,080	2,550	1,680	1,500	840	700	635	570
19				1,160	1,080	2,550	1,770	1,320	920	700	635	570
20				1,000	1,160	2,550	1,860	1,320	840	700	635	510
21				1,000	1,080	2,550	1,860	1,410	840	700	635	510
22				1,950	1,080	2,250	1,860	1,410	840	700	635	510
23				3,150	1,000	2,250	2,050	1,320	770	635	635	510
24				3,050	1,080	2,150	2,150	1,410	770	635	635	510
25				2,250	1,240	1,950	2,250	1,240	770	635	635	510
26				1,950	1,770	2,050	2,350	1,240	840	635	635	510
27				1,770	2,650	1,770	2,250	1,240	770	635	635	510
28				1,770	3,150	1,770	2,050	1,240	770	635	570	510
29				1,680		1,680	1,860	1,160	770	635	570	510
30				1,680		1,680	1,500	1,240	840	635	510	510
31				2,050		1,770		1,240		635	510	

NOTE.—Daily discharge determined from rating curves, as follows: For 1905-1907, well defined between 430 and 1,200 second-feet; for 1910, well defined between 450 and 1,200 second-feet.

Monthly discharge of Hood River at Winans, Oreg., for 1905-1907, 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
November, 19-30	1,160	555	709	16,900	B.
December	1,420	555	804	49,400	B.
January	2,460	690	1,030	63,300	B.
February	2,560	760	1,400	77,800	B.
March	2,060	1,150	1,280	78,700	D.
April	1,970	1,240	1,590	94,600	D.
May	1,600	1,070	1,280	78,700	D.
June	1,600	990	1,240	73,800	D.
July	1,320	690	1,000	61,500	B.
August	760	555	674	41,400	B.
September	990	490	586	34,900	B.
The period				671,000	
1906-7.					
October	1,780	555	1,100	67,600	B.
November	6,460	620	1,890	112,000	B.
December	6,580	835	1,740	107,000	B.
January	2,560	910	1,280	78,700	C.
February	5,140	1,600	2,230	124,000	D.
March 1-16	1,780	1,070	1,470	46,700	C.
The period				536,000	
1910.					
January 16-31	3,150	1,000	1,800	57,300	B.
February	3,150	1,000	1,350	75,000	B.
March	5,500	1,680	2,680	165,000	C.
April	2,350	1,500	1,850	110,000	B.
May	2,250	1,160	1,580	97,200	B.
June	1,160	770	914	54,400	B.
July	840	635	729	44,800	B.
August	635	510	612	37,600	B.
September	570	450	502	29,900	B.
The period				671,000	

HOOD RIVER AT TUCKER'S BRIDGE, NEAR HOOD RIVER, OREG.

Location.—In sec. 15, T. 2 N., R. 10 E., at Tucker's bridge, about 5 miles south of the town of Hood River.

Records available.—October 20, 1897, to December 31, 1899.

Drainage area.—Not measured.

Gage.—Wire type; attached to bridge.

Channel.—Rock ledge; permanent.

Discharge measurements.—Made from bridge.

Diversions.—Probably negligible during period of maintenance of station.

Accuracy.—Records good.

Discharge measurements of Hood River at Tucker's bridge, near Hood River, Oreg., in 1897-1899.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1897.		<i>Feet.</i>	<i>Sec.-ft.</i>	1899.		<i>Feet.</i>	<i>Sec.-ft.</i>
Sept. 28	C. C. Babb.....	1.70	541	June 9	Sydney Arnold.....	4.55	2,550
Oct. 20	.....do.....	1.50	459				
1898.							
May 5	Sydney Arnold.....	3.45	1,500				

Daily gage height, in feet, of Hood River at Tucker's bridge, near Hood River, Oreg., for 1897-1899.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1.....		1.6	3.4	4.6	2.6	3.5	2.4	3.5	3.2	2.5	2.4	1.7
2.....		1.5	3.0	4.6	2.5	3.5	2.4	3.5	3.1	2.5	2.4	1.6
3.....		1.5	2.8	4.0	2.5	3.5	2.4	3.5	2.9	2.6	2.3	1.6
4.....		1.5	2.7	3.9	2.7	3.5	2.4	3.4	2.8	2.6	2.2	1.6
5.....		1.7	6.7	3.8	3.6	3.4	2.4	3.4	2.9	2.6	2.2	1.6
6.....		1.8	7.5	4.0	4.6	3.4	2.4	3.3	3.3	2.5	2.2	1.6
7.....		1.6	7.3	3.6	5.6	3.5	2.7	3.3	3.4	2.5	2.2	1.6
8.....		1.7	7.0	3.5	4.8	3.5	2.7	3.3	3.4	2.5	2.2	1.6
9.....		2.1	5.5	3.4	4.6	3.4	2.6	3.4	3.5	2.5	2.2	1.6
10.....		4.6	5.0	3.2	4.0	3.3	2.6	3.4	3.4	2.6	2.3	1.8
11.....		4.8	4.9	3.0	3.8	3.2	2.5	3.4	3.4	2.6	2.4	1.8
12.....		5.2	5.1	3.0	5.2	3.2	2.6	3.5	3.4	2.6	2.3	1.7
13.....		5.7	5.0	3.0	6.0	3.1	3.0	3.5	3.4	2.7	2.2	1.7
14.....		3.8	6.5	3.1	8.7	3.0	3.4	3.6	3.4	2.5	2.2	1.7
15.....		3.2	5.4	3.2	8.6	3.0	3.5	3.5	3.4	2.4	2.2	1.7
16.....		3.0	5.0	3.3	7.6	3.0	3.5	3.4	3.3	2.4	2.1	1.7
17.....		4.2	4.5	3.2	6.0	2.8	3.4	3.4	3.2	2.7	2.0	1.7
18.....		9.0	3.9	3.2	5.3	2.7	3.2	3.4	3.2	2.5	2.0	1.8
19.....		7.8	3.9	4.0	4.5	2.6	3.1	3.4	3.2	2.3	1.9	1.8
20.....	1.5	5.6	3.5	3.7	4.3	2.6	3.2	3.4	3.1	2.2	1.8	1.8
21.....	1.9	5.2	3.5	3.3	4.5	2.8	3.2	3.5	3.1	2.2	1.8	2.6
22.....	1.8	4.1	3.1	3.2	4.1	2.6	3.5	3.6	3.0	2.2	1.9	2.2
23.....	1.8	3.5	2.9	3.2	4.0	2.6	4.0	3.4	2.9	2.4	1.9	2.6
24.....	1.9	3.1	2.9	3.0	3.8	2.7	4.0	3.3	2.8	2.3	2.0	1.8
25.....	1.8	2.9	3.4	3.0	3.5	2.6	4.1	3.3	2.8	2.3	2.0	1.6
26.....	1.7	2.9	4.0	3.0	3.5	2.5	4.7	3.3	2.8	2.2	2.0	1.6
27.....	1.6	2.6	5.0	2.9	3.5	2.5	4.3	3.3	2.8	2.2	2.0	1.6
28.....	1.6	2.5	8.97	2.8	3.5	2.5	4.0	3.2	2.7	2.3	2.0	1.6
29.....	1.6	2.7	7.6	2.6	.....	2.5	3.9	3.2	2.6	2.3	1.9	2.2
30.....	1.6	4.0	6.0	2.7	.....	2.5	3.8	3.1	2.5	2.4	1.8	3.2
31.....	1.6	.....	5.4	2.7	.....	2.4	.....	3.0	.....	2.5	1.7	.....

Daily gage height, in feet, of Hood River at Tucker's bridge, near Hood River, Oreg., for 1897-1899—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1898-99.												
1.....	2.4	1.6	4.4	4.2	4.4	7.5	2.8	3.8	4.6	3.8	3.0	2.6
2.....	2.2	1.6	4.2	4.0	4.0	6.0	2.9	3.6	4.5	3.9	3.0	2.5
3.....	2.2	2.0	4.0	3.8	3.8	4.8	3.0	3.5	4.5	4.0	2.9	2.5
4.....	2.1	4.0	3.8	3.6	3.5	4.6	3.5	3.5	4.5	4.1	2.9	2.7
5.....	1.9	3.6	3.6	3.5	3.6	4.2	3.4	3.4	4.7	4.0	2.9	2.5
6.....	1.9	3.0	3.2	3.3	3.2	4.0	3.3	3.6	4.1	4.0	2.9	2.6
7.....	1.8	2.8	3.0	3.0	3.3	4.0	3.2	3.5	4.1	3.9	2.9	2.4
8.....	1.7	2.6	2.8	2.8	4.1	3.8	3.2	3.7	4.5	3.8	2.8	2.4
9.....	1.8	2.5	2.4	2.6	6.15	3.8	3.5	4.2	4.7	3.8	2.8	2.4
10.....	2.0	2.3	2.2	2.4	6.5	3.7	3.5	4.4	4.5	3.8	3.6	2.3
11.....	2.0	2.0	2.2	2.3	5.5	3.6	4.5	4.9	5.5	3.8	3.0	2.3
12.....	2.0	2.0	2.1	2.2	4.8	3.5	6.6	4.4	5.2	3.8	2.8	2.4
13.....	2.0	1.9	2.0	2.1	4.6	3.5	5.5	4.3	5.0	3.9	2.7	2.4
14.....	2.0	1.9	2.0	2.0	4.4	3.3	4.5	3.9	4.5	4.0	2.6	2.4
15.....	3.3	1.9	2.0	4.0	5.5	3.7	4.2	3.6	4.5	4.1	2.6	2.3
16.....	2.8	1.9	2.1	6.3	4.8	3.2	4.5	3.6	4.4	4.1	2.7	2.3
17.....	2.6	4.0	2.1	6.2	4.5	3.0	4.5	3.6	4.6	4.0	2.7	2.3
18.....	2.5	6.0	2.3	6.1	4.5	3.0	4.0	3.6	4.8	4.0	2.6	2.3
19.....	2.3	4.8	3.1	5.8	4.4	3.0	4.0	3.6	5.0	3.9	2.6	2.3
20.....	2.1	4.3	2.7	7.15	4.3	3.0	3.9	3.5	4.6	3.9	2.6	2.3
21.....	2.0	3.0	2.6	11.0	4.2	3.0	3.9	3.5	4.2	3.5	2.6	2.3
22.....	1.9	2.9	2.5	7.5	4.0	3.0	3.9	3.6	4.2	3.4	4.0	2.2
23.....	1.9	2.8	2.3	6.5	3.9	2.9	5.3	3.7	4.2	3.2	2.9	2.1
24.....	1.8	2.7	2.2	5.3	3.7	2.9	5.45	3.9	4.2	3.2	2.7	2.1
25.....	1.7	2.6	2.3	4.9	3.6	2.8	6.0	4.0	4.4	3.2	2.7	2.1
26.....	1.7	2.6	3.3	5.8	3.5	2.7	5.45	4.0	4.2	3.2	2.8	2.1
27.....	1.7	2.6	3.6	4.5	4.2	2.7	5.5	4.0	4.2	3.2	3.3	2.2
28.....	1.7	2.1	5.0	4.2	5.65	2.7	5.3	4.4	3.9	3.3	2.8	2.2
29.....	1.7	3.0	4.8	4.1	.....	2.7	5.35	4.4	3.9	4.0	2.7	2.2
30.....	1.6	3.5	4.5	4.1	.....	2.8	3.9	4.4	3.9	3.4	2.6	2.6
31.....	1.6	.....	4.3	4.8	.....	2.8	.....	4.0	.....	3.2	2.6	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1899.				1899.				1899.			
1.....	3.2	2.1	9.0	11.....	2.1	2.8	4.5	21.....	3.6	4.4	4.8
2.....	2.6	2.1	6.6	12.....	2.1	2.8	4.2	22.....	3.0	4.0	4.9
3.....	2.3	2.0	5.6	13.....	2.0	2.7	4.0	23.....	2.7	3.8	4.7
4.....	2.3	2.2	4.8	14.....	1.9	2.7	3.8	24.....	2.6	3.5	4.7
5.....	2.2	2.2	4.6	15.....	1.7	2.6	3.6	25.....	2.5	3.2	4.7
6.....	2.2	2.2	4.2	16.....	1.8	2.7	3.5	26.....	2.5	3.3	4.6
7.....	2.1	2.7	3.8	17.....	2.0	2.7	3.4	27.....	2.4	6.0	4.4
8.....	2.1	2.6	3.6	18.....	2.6	2.8	3.4	28.....	2.3	5.8	4.2
9.....	2.1	2.7	3.2	19.....	5.1	5.4	3.4	29.....	2.3	7.2	3.8
10.....	2.1	2.8	3.5	20.....	4.0	4.5	3.3	30.....	2.2	6.6	3.7
								31.....	2.2	.....	3.6

Daily discharge, in second-feet, of Hood River at Tucker's bridge, near Hood River, Oreg., for 1897-1899.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1.		486	1,440	2,550	936	1,510	830	1,510	1,300	882	830	522
2.		452	1,170	2,550	882	1,510	830	1,510	1,240	882	830	486
3.		452	1,050	1,900	882	1,510	830	1,510	1,110	936	780	486
4.		452	992	1,810	992	1,510	830	1,440	1,050	936	732	486
5.		522	5,700	1,730	1,590	1,440	830	1,440	1,110	936	732	486
6.		560	6,900	1,900	2,550	1,440	830	1,370	1,370	882	732	486
7.		486	6,600	1,590	4,050	1,510	992	1,370	1,440	882	732	486
8.		522	6,150	1,510	2,850	1,510	992	1,370	1,440	882	732	486
9.		686	3,900	1,440	2,550	1,440	936	1,440	1,510	882	732	486
10.		2,550	3,150	1,300	1,900	1,370	936	1,440	1,440	936	780	560
11.		2,850	3,000	1,170	1,730	1,300	882	1,440	1,440	936	830	560
12.		3,450	3,300	1,170	3,450	1,300	936	1,510	1,440	936	780	522
13.		4,200	3,150	1,170	4,650	1,240	1,170	1,510	1,440	992	732	522
14.		1,730	5,400	1,240	8,700	1,170	1,440	1,590	1,440	882	732	522
15.		1,300	3,750	1,300	8,550	1,170	1,510	1,510	1,440	830	732	522
16.		1,170	3,150	1,370	7,050	1,170	1,510	1,440	1,370	830	686	522
17.		2,110	2,400	1,300	4,650	1,050	1,440	1,440	1,300	992	642	522
18.		9,150	1,810	1,300	3,600	992	1,300	1,440	1,300	882	642	560
19.		7,350	1,810	1,900	2,400	936	1,240	1,440	1,300	780	600	560
20.	452	4,050	1,510	1,660	2,230	936	1,300	1,440	1,240	732	560	560
21.	600	3,450	1,510	1,370	2,400	1,050	1,300	1,510	1,240	732	560	936
22.	560	2,000	1,240	1,300	2,000	936	1,510	1,590	1,170	732	600	732
23.	560	1,510	1,110	1,300	1,900	936	1,900	1,440	1,110	830	600	936
24.	600	1,240	1,110	1,170	1,730	992	1,900	1,370	1,050	780	642	560
25.	560	1,110	1,440	1,170	1,510	936	2,000	1,370	1,050	780	642	486
26.	522	1,110	1,900	1,170	1,510	882	2,700	1,370	1,050	732	642	486
27.	486	936	3,150	1,110	1,510	882	2,230	1,370	1,050	732	642	486
28.	486	882	9,150	1,050	1,510	882	1,900	1,300	992	780	642	486
29.	486	992	7,050	936	-----	882	1,810	1,300	936	780	600	732
30.	486	1,900	4,650	992	-----	882	1,730	1,240	882	830	560	1,300
31.	486	-----	3,750	992	-----	830	-----	1,170	-----	882	522	-----
1898-99.												
1.	830	486	2,360	2,110	2,360	6,900	1,050	1,730	2,550	1,730	1,170	936
2.	732	486	2,110	1,900	1,900	4,650	1,110	1,590	2,400	1,810	1,170	882
3.	732	642	1,900	1,730	1,730	2,850	1,170	1,510	2,400	1,900	1,110	882
4.	686	1,900	1,730	1,590	1,510	2,550	1,510	1,510	2,400	2,000	1,110	992
5.	600	1,590	1,590	1,510	1,590	2,110	1,440	1,440	2,700	1,900	1,110	882
6.	600	1,170	1,300	1,370	1,300	1,900	1,370	1,590	2,000	1,900	1,110	936
7.	560	1,050	1,170	1,170	1,370	1,900	1,300	1,510	2,000	1,810	1,110	830
8.	522	936	1,050	1,050	2,000	1,730	1,300	1,660	2,400	1,730	1,050	830
9.	560	882	830	936	4,880	1,730	1,510	2,110	2,700	1,730	1,050	830
10.	642	780	732	830	5,400	1,660	1,510	2,360	2,400	1,730	1,590	780
11.	642	642	732	780	3,900	1,590	2,400	3,000	3,900	1,730	1,170	780
12.	642	642	686	732	2,850	1,510	5,550	2,360	3,450	1,730	1,050	830
13.	642	600	642	686	2,550	1,510	3,900	2,230	3,150	1,810	992	830
14.	642	600	642	642	2,360	1,370	2,400	1,810	2,400	1,900	936	830
15.	1,370	600	642	1,900	3,900	1,660	2,110	1,590	2,400	2,000	936	780
16.	1,050	600	686	5,100	2,850	1,300	2,400	1,590	2,360	2,000	992	780
17.	936	1,900	686	4,950	2,400	1,170	2,400	1,590	2,550	1,900	992	780
18.	882	4,650	780	4,800	2,400	1,170	1,900	1,590	2,850	1,900	936	780
19.	780	2,850	1,240	4,350	2,360	1,170	1,900	1,590	3,150	1,810	936	780
20.	686	2,230	992	6,380	2,230	1,170	1,810	1,510	2,550	1,810	936	780
21.	642	1,170	936	12,200	2,110	1,170	1,810	1,510	2,110	1,510	936	780
22.	600	1,110	882	6,900	1,900	1,170	1,810	1,590	2,110	1,440	1,900	732
23.	600	1,050	780	5,400	1,810	1,110	3,600	1,660	2,110	1,300	1,110	686
24.	560	992	732	3,600	1,660	1,110	3,820	1,810	2,110	1,300	992	686
25.	522	936	780	3,000	1,590	1,050	4,650	1,900	2,360	1,300	992	686
26.	522	936	1,370	4,350	1,510	992	3,820	1,900	2,110	1,300	1,050	686
27.	522	936	1,590	2,400	2,110	992	3,900	1,900	2,110	1,300	1,370	732
28.	522	686	3,150	2,110	4,120	992	3,600	2,360	1,810	1,370	1,050	732
29.	522	1,170	2,850	2,000	-----	992	3,680	2,360	1,810	1,900	992	732
30.	486	1,510	2,400	2,000	-----	1,050	1,810	2,360	1,810	1,440	936	936
31.	486	-----	2,230	2,850	-----	1,050	-----	1,900	-----	1,300	936	-----

Daily discharge, in second-feet, of Hood River at Tucker's bridge, near Hood River, Oreg., for 1897-1899—Continued.

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1899.			1899.			1899.					
1.....	1,300	686	9,150	11.....	686	1,050	2,400	21.....	1,590	2,360	2,850
2.....	936	686	5,550	12.....	686	1,050	2,110	22.....	1,170	1,900	3,000
3.....	780	642	4,050	13.....	642	992	1,900	23.....	992	1,730	2,700
4.....	780	732	2,850	14.....	600	992	1,730	24.....	936	1,510	2,700
5.....	732	732	2,550	15.....	522	936	1,590	25.....	882	1,300	2,700
6.....	732	732	2,110	16.....	560	992	1,510	26.....	882	1,370	2,550
7.....	686	992	1,730	17.....	642	992	1,440	27.....	830	4,650	2,300
8.....	686	936	1,590	18.....	936	1,050	1,440	28.....	780	4,350	2,110
9.....	686	992	1,300	19.....	3,300	3,750	1,440	29.....	780	6,450	1,730
10.....	686	1,050	1,510	20.....	1,900	2,400	1,370	30.....	732	5,550	1,660
								31.....	732	.....	1,590

NOTE.—Daily discharge determined from a fairly well defined rating curve.

Monthly discharge of Hood River at Tucker's bridge, near Hood River, Oreg., for 1897-1899.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1897-98.					
October 20-31.....	600	452	524	12,500	B.
November.....	9,150	452	1,990	118,000	B.
December.....	9,150	992	3,300	203,000	C.
January.....	2,550	936	1,430	88,200	B.
February.....	8,700	882	2,870	159,000	B.
March.....	1,510	830	1,160	71,700	B.
April.....	2,700	830	1,350	80,400	B.
May.....	1,590	1,170	1,430	87,700	B.
June.....	1,510	882	1,240	73,900	B.
July.....	992	732	852	52,400	B.
August.....	830	522	684	42,100	B.
September.....	1,300	486	583	34,700	B.
The period.....				1,020,000	
1898-99.					
October.....	1,370	486	668	41,100	B.
November.....	4,650	486	1,190	70,900	B.
December.....	3,150	642	1,300	79,700	B.
January.....	12,200	642	2,940	181,000	C.
February.....	5,400	1,300	2,450	136,000	B.
March.....	6,900	992	1,720	106,000	B.
April.....	5,550	1,050	2,420	144,000	B.
May.....	3,000	1,440	1,840	113,000	B.
June.....	3,900	1,810	2,440	145,000	B.
July.....	2,000	1,300	1,690	104,000	B.
August.....	1,900	936	1,090	66,800	B.
September.....	992	686	804	47,800	B.
The year.....	12,200	486	1,710	1,240,000	
1899.					
October.....	3,300	522	928	57,100	B.
November.....	6,450	642	1,780	106,000	B.
December.....	9,150	1,300	2,430	149,000	B.

SANDY RIVER BASIN.

GENERAL FEATURES.

Sandy River rises in the glaciers of Mount Hood and flows north-westward, uniting with Columbia River at Troutdale. It drains the western slope of the Cascade Mountains at their northern extremity in Oregon.

The principal tributaries of the Sandy are Bull Run River, which drains the Bull Run National Forest and furnishes the water supply for the city of Portland; Zigzag, Salmon, and Little Sandy rivers, and Camp and Still creeks.

Elevations within the basin range from 647 feet above sea level at Bull Run post office to 11,225 feet at the summit of Mount Hood; Salmon post office is 1,000 feet, Bull Run Lake 3,161 feet, Government Camp 3,880 feet, and the summit of Zigzag Mountain 5,014 feet. The drainage area includes 247 square miles below the mouth of Salmon River. The drainage area of Bull Run River at the mouth is 168 square miles.

The mean annual precipitation at Bull Run is 76 inches; at Government Camp 87 inches. It is likely, however, that the figure for Government Camp is not representative because of the close proximity of the station to Mount Hood. A large part of the precipitation on the headwaters falls as snow. In the foothills, however, it nearly all appears as rain during the nine months from September to May. The value of the waters of this stream lies in their availability for municipal water supplies and in the power that can be generated by them. Favorable sites for power development are numerous and the distance to an industrial center is not great. A large part of the basin is heavily forested, although there are many areas from which the timber was burned a good many years ago. These tracts have, however, grown up in second-growth timber and the underbrush is almost impenetrable.

SANDY RIVER ABOVE SALMON RIVER, AT BRIGHTWOOD, OREG.

Location.—In sec. 24, T. 2 S., R. 6 E., at McIntyre's bridge, just back of the post office at Brightwood, and three-fourths mile above Salmon River.

Records available.—May 17 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Rocks, sand, and gravel; shifts somewhat.

Discharge measurements.—Made from bridge.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by the Mount Hood Railway & Power Co.

Discharge measurements of Sandy River above Salmon River, at Brightwood, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
May 17	John Dubuis.....	2.32	667	Aug. 18	F. F. Henshaw.....	1.50	306
June 18	J. C. Stevens.....	1.78	366	19	.....do.....	1.48	287
July 20	F. C. Ebert.....	1.73	365				

Daily gage height, in feet, of Sandy River above Salmon River, at Brightwood, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		2.10	1.70	1.51	1.28	16.....		1.90	1.74	1.34	1.26
2.....		2.00	1.70	1.48	1.24	17.....	2.32	1.82	1.68	1.36	1.24
3.....		1.92	1.66	1.48	1.30	18.....	2.30	1.78	1.62	1.40	1.20
4.....		1.90	1.65	1.50	1.28	19.....	2.28	2.05	1.64	1.48	1.32
5.....		1.90	1.68	1.48	1.30	20.....	2.20	1.90	1.72	1.44	1.42
6.....		1.85	1.72	1.48	1.30	21.....	2.19	1.86	1.78	1.38	1.55
7.....		1.90	1.70	1.51	1.22	22.....	2.20	1.80	1.65	1.36	1.38
8.....		1.85	1.74	1.50	1.20	23.....	2.20	1.76	1.59	1.36	1.28
9.....		1.85	1.80	1.58	1.20	24.....	2.25	1.72	1.59	1.29	1.30
10.....		1.90	1.78	1.48	1.22	25.....	2.22	1.74	1.59	1.30	1.21
11.....		2.38	1.80	1.48	1.21	26.....	2.15	1.75	1.55	1.35	1.20
12.....		2.10	1.78	1.48	1.18	27.....	2.15	1.76	1.55	1.32	1.22
13.....		1.92	1.72	1.45	1.20	28.....	2.08	1.74	1.54	1.40	1.25
14.....		1.90	1.75	1.40	1.20	29.....	2.10	1.72	1.52	1.31	1.25
15.....		1.90	1.72	1.38	1.20	30.....	2.10	1.7a	1.52	1.28	1.28
						31.....	2.10	1.50	1.32		

Daily discharge, in second-feet, of Sandy River above Salmon River, at Brightwood, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		506	349	298	249	16.....		414	361	260	245
2.....		456	349	290	242	17.....	633	386	343	264	242
3.....		422	338	290	252	18.....	620	373	327	272	235
4.....		414	335	295	249	19.....	608	481	332	290	256
5.....		414	343	290	252	20.....	560	414	355	281	277
6.....		396	355	290	252	21.....	555	400	373	268	308
7.....		414	349	298	238	22.....	560	379	335	264	268
8.....		396	361	295	235	23.....	560	367	318	264	249
9.....		396	379	316	235	24.....	590	355	318	250	252
10.....		414	373	290	238	25.....	572	361	318	252	237
11.....		672	379	290	237	26.....	533	364	308	262	235
12.....		506	373	290	232	27.....	533	367	308	256	238
13.....		422	355	284	235	28.....	496	361	305	272	244
14.....		414	364	272	235	29.....	506	355	300	254	244
15.....		414	355	268	235	30.....	506	361	300	249	249
						31.....	506		295	256	

NOTE.—Daily discharge determined from fairly well defined rating curve.

Monthly discharge of Sandy River above Salmon River, at Brightwood, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
May 17-31.....	633	496	556	16,500	B.
June.....	672	355	413	24,600	B.
July.....	379	295	340	20,900	A.
August.....	316	249	276	17,000	A.
September.....	308	232	246	14,600	A.
The period.....				93,600	

SANDY RIVER BELOW SALMON RIVER, NEAR BRIGHTWOOD,¹ OREG.

Location.—In sec. 22, T. 2 S., R. 6 E., at the county highway bridge, 1½ miles below the post office at Brightwood, and 1 mile below the mouth of Salmon River.

Records available.—December 12, 1907, to September 30, 1910.

Drainage area.—247 square miles.

Gage.—Standard chain on upstream side of highway bridge.

Channel.—Rocks and boulders; shifts somewhat.

Discharge measurements.—Made from highway bridge.

Accuracy.—Results fair.

Discharge measurements of Sandy River below Salmon River, near Brightwood, Oreg., in 1907-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1907. Aug. 6 Dec. 12	J. C. Stevens..... McGlashan and Ellsworth.....	<i>Feet.</i> 3.43 5.45	<i>Sec.-ft.</i> 448 2,270	1909. Sept. 11	R. B. Post.....	<i>Feet.</i> 3.33	<i>Sec.-ft.</i> 352
1908. July 24 Oct. 8	H. D. McGlashan..... L. R. Allen.....	3.80 3.43	695 323	1910. June 18 18 July 20 Aug. 19 Sept. 8	J. C. Stevens..... John Dubuis..... F. C. Ebert..... F. F. Henshaw..... Ebert and Bolster.....	3.65 3.63 3.4 3.18 2.97	600 592 467 351 280

Daily gage height, in feet, of Sandy River below Salmon River, near Brightwood, Oreg., for 1907-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1				5.2	4.25	4.35	4.95	5.4	6.2	4.5	3.6	3.8
2				5.05	4.05	4.4	5.0	5.2	6.1	4.5	3.65	3.75
3				4.95	4.05	4.35	5.3	5.1	5.85	4.4	3.6	3.7
4				4.9	4.15	4.15	5.1	4.9	5.7	4.4	3.6	3.65
5				5.1	4.7	4.05	4.8	4.9	5.5	4.3	3.5	3.55
6				5.2	5.2	4.0	4.9	4.95	5.45	4.25	3.5	3.55
7				5.0	4.45	3.95	4.75	5.15	5.4	4.25	3.5	3.6
8				4.95	4.55	3.95	4.8	5.1	5.45	4.2	3.5	3.75
9				5.25	4.4	4.0	4.75	5.0	5.65	4.2	3.55	3.65
10				5.05	4.15	4.05	4.9	4.9	5.55	4.2	3.5	3.6
11				5.6	4.3	4.15	5.2	4.95	5.4	4.2	3.5	3.55
12			5.45	5.4	4.25	4.8	5.4	4.9	5.0	4.15	3.55	3.5
13			7.0	5.2	4.2	6.4	5.4	4.9	4.9	4.1	3.6	3.5
14			6.05	5.05	4.1	8.4	5.55	4.85	4.9	4.05	3.5	3.6
15			5.4	4.8	4.2	13.6	5.5	5.1	4.85	4.05	3.55	3.6
16			5.05	4.7	4.5	10.1	5.65	5.55	4.8	4.0	3.5	3.6
17			4.85	4.75	4.65	7.9	6.0	5.4	4.85	3.95	3.45	3.55
18			4.7	4.8	4.65	6.7	6.3	5.75	5.0	3.95	3.4	3.55
19			4.6	5.0	4.4	6.1	6.2	5.7	5.1	3.95	3.45	3.5
20			4.7	5.55	4.2	5.9	6.25	5.6	5.15	3.95	3.5	3.45
21			7.3	5.15	4.15	5.5	6.0	5.55	5.1	4.0	3.5	3.55
22			9.8	4.9	4.15	5.3	5.8	5.4	5.1	4.0	3.45	3.5
23			9.8	4.8	4.1	5.05	5.5	5.2	5.05	3.95	3.45	3.45
24			8.6	4.65	4.05	5.35	6.6	5.2	4.9	3.9	3.4	3.45
25			7.6	4.5	4.15	5.3	6.05	5.15	4.85	3.8	3.4	3.4
26			9.1	4.45	4.2	5.25	5.85	5.15	4.75	3.7	3.45	3.4
27			7.2	4.45	4.7	5.15	5.6	5.2	5.0	3.65	3.45	3.4
28			6.4	4.3	4.6	5.1	5.45	5.2	7.0	3.65	3.45	3.4
29			5.95	4.45	4.45	5.3	5.3	5.25	6.65	3.6	3.95	3.45
30			5.5	4.3	.....	5.15	5.2	5.1	6.0	3.65	4.1	3.5
31			5.1	4.25	.....	5.05	.....	5.25	.....	3.6	3.9	.....

¹ Referred to in earlier reports as at Salmon, Oreg.

Daily gage height, in feet, of Sandy River below Salmon River, near Brightwood, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.	3.6	5.2	4.05	4.5	4.3	5.1	5.45	5.6	6.15	3.95	3.65	3.35
2.	3.85	4.75	3.85	4.4	4.4	5.35	5.2	5.65	5.9	3.9	3.6	3.4
3.	3.7	4.55	3.8	4.75	4.45	5.1	4.95	5.8	5.8	3.85	3.6	3.4
4.	3.7	4.2	3.7	5.2	4.45	4.95	4.85	6.2	5.6	3.85	3.55	3.35
5.	3.6	4.05	3.65	4.85	4.35	4.75	4.85	5.95	5.25	3.8	3.5	3.3
6.	3.55	3.95	3.65	4.65	4.3	4.7	4.8	5.55	5.15	4.15	3.5	3.3
7.	3.45	3.9	3.65	4.5	4.2	4.7	4.75	5.35	5.05	4.3	3.45	3.25
8.	3.43	3.75	3.75	4.35	4.2	4.75	4.75	5.25	4.95	4.3	3.45	3.25
9.	3.45	3.65	3.65	4.25	4.1	4.95	4.8	5.3	4.85	4.35	3.45	3.2
10.	3.45	3.6	3.55	4.2	4.1	4.8	4.8	5.4	4.8	4.35	3.5	3.35
11.	3.6	3.55	3.6	4.2	4.05	4.6	4.75	5.55	4.8	4.5	3.45	3.4
12.	3.75	3.5	5.0	4.15	4.05	4.55	4.8	5.4	4.75	4.3	3.45	3.55
13.	4.25	3.5	5.15	4.1	4.0	4.5	4.9	5.25	4.55	4.15	3.4	3.5
14.	5.0	3.45	4.9	4.05	4.1	4.5	4.85	5.2	4.5	4.1	3.4	3.45
15.	4.75	3.45	4.3	4.6	4.3	4.45	4.85	5.1	4.45	4.0	3.5	3.35
16.	4.7	3.4	4.1	5.4	5.6	4.45	4.9	5.1	4.45	3.95	3.5	3.3
17.	4.35	3.45	4.0	6.25	6.7	4.5	4.75	5.2	4.4	3.95	3.45	3.25
18.	4.1	4.9	3.9	7.5	6.75	4.65	4.5	5.1	4.35	3.85	3.45	3.2
19.	4.35	4.2	3.75	8.1	5.8	4.6	4.55	5.05	4.25	3.75	3.5	3.65
20.	5.15	4.55	3.75	9.45	5.35	4.55	4.6	4.95	4.25	3.55	3.45	3.9
21.	4.6	4.75	3.8	8.85	5.2	4.55	4.65	4.95	4.2	3.7	3.45	3.65
22.	4.4	4.95	3.85	7.8	5.1	4.5	4.65	4.9	4.15	3.8	3.4	3.5
23.	4.25	4.7	3.9	6.5	5.8	4.45	4.7	4.85	4.15	3.75	3.4	3.3
24.	4.1	4.5	3.85	5.7	6.4	4.45	4.65	4.95	4.1	3.7	3.45	3.25
25.	4.05	4.35	3.75	5.35	6.0	4.5	4.65	5.1	4.1	3.75	3.45	3.25
26.	4.1	4.2	4.9	5.2	5.2	4.6	5.15	5.35	4.1	3.85	3.65	3.25
27.	4.1	4.05	5.05	4.95	5.1	4.65	7.7	5.65	4.05	3.9	3.6	3.2
28.	4.05	4.0	6.1	4.8	5.0	4.55	7.0	5.7	4.0	3.9	3.35	3.2
29.	4.05	4.0	5.5	4.65	-----	4.9	6.1	5.75	3.95	3.85	3.3	3.35
30.	4.2	4.2	5.1	4.5	-----	5.15	5.55	5.9	3.95	3.75	3.35	3.4
31.	6.2	-----	4.85	4.35	-----	5.3	-----	6.2	-----	3.75	3.35	-----
1909-10.												
1.	3.35	5.6	6.85	4.05	4.85	11.3	5.15	4.75	4.15	3.55	3.25	3.1
2.	3.3	8.6	6.05	4.1	4.5	10.0	5.25	4.7	4.1	3.5	3.25	3.1
3.	3.2	7.8	5.4	4.95	4.05	9.1	5.3	5.7	4.1	3.5	3.25	3.2
4.	3.2	6.4	4.95	4.0	3.9	8.75	5.45	5.55	4.05	3.5	3.25	3.15
5.	3.25	5.95	4.85	4.0	3.85	8.55	5.5	5.4	4.0	3.45	3.25	3.1
6.	3.7	5.45	4.85	3.95	3.85	7.2	5.65	5.15	3.95	3.5	3.25	3.1
7.	3.85	5.25	4.8	3.9	3.95	6.05	5.4	4.95	3.85	3.5	3.25	3.05
8.	3.4	5.15	4.75	3.85	1.05	5.95	5.35	4.95	3.8	3.55	3.25	3.1
9.	3.35	5.1	4.7	3.8	4.15	6.0	5.5	4.9	3.75	3.6	3.3	3.1
10.	3.35	5.2	4.6	3.75	4.15	6.0	5.7	5.4	3.8	3.55	3.25	3.1
11.	3.4	5.05	5.95	3.75	4.2	6.15	5.75	5.35	4.45	3.55	3.25	3.05
12.	3.4	4.9	8.6	3.7	4.25	6.6	5.8	5.1	4.3	3.5	3.25	3.05
13.	3.35	4.7	7.85	3.65	5.4	6.75	5.75	4.95	4.05	3.5	3.25	3.05
14.	3.3	4.5	6.3	3.65	4.65	6.85	5.65	4.9	3.9	3.5	3.2	3.05
15.	3.3	4.25	5.95	3.65	4.25	6.75	5.4	4.75	3.85	3.5	3.15	3.1
16.	3.25	4.2	5.45	3.6	4.15	6.65	5.3	4.65	3.8	3.45	3.15	3.15
17.	3.25	4.25	5.1	3.6	4.3	6.5	5.25	4.6	3.75	3.45	3.2	3.05
18.	3.25	7.0	4.95	3.85	4.55	6.2	5.4	4.5	3.75	3.45	3.2	3.05
19.	3.35	9.65	4.8	4.65	4.55	5.95	5.55	4.4	3.95	-----	3.25	3.05
20.	3.85	8.9	4.7	4.9	4.5	6.05	5.6	4.35	3.85	-----	3.2	3.1
21.	3.8	8.75	4.65	5.35	4.65	6.2	5.6	4.35	3.8	3.4	3.15	3.2
22.	3.6	14.1	4.5	6.2	4.8	6.25	5.75	4.3	3.75	3.4	3.25	3.15
23.	3.45	10.4	4.5	7.25	5.1	6.2	5.85	4.35	3.7	3.4	3.2	3.1
24.	3.35	11.0	4.35	7.0	5.75	5.95	5.75	4.4	3.7	3.35	3.2	3.05
25.	3.35	7.9	4.25	6.1	6.05	5.8	5.7	4.35	3.65	3.35	3.15	3.05
26.	3.3	6.65	4.15	5.7	5.85	5.35	5.6	4.25	3.65	3.35	3.15	3.0
27.	3.25	6.1	4.1	5.45	5.95	5.15	5.35	4.2	3.6	3.3	3.2	3.05
28.	3.35	7.65	4.0	5.2	7.55	5.05	5.1	4.15	3.6	3.3	3.25	3.0
29.	3.4	7.2	4.05	5.05	-----	4.9	5.05	4.15	3.55	3.3	3.2	3.05
30.	3.65	7.35	4.25	5.15	-----	4.8	4.95	4.2	3.55	3.3	3.15	3.1
31.	5.65	-----	4.2	5.05	-----	4.65	-----	4.2	-----	3.25	3.1	-----

Daily discharge, in second-feet, of Sandy River below Salmon River, near Brightwood, Oreg., for 1907-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1				1,920	1,040	1,120	1,670	2,130	3,020	1,250	570	580
2				1,770	880	1,160	1,720	1,920	2,900	1,250	590	550
3				1,670	880	1,120	2,020	1,820	2,620	1,160	560	520
4				1,620	960	960	1,820	1,620	2,460	1,160	560	490
5				1,820	1,430	880	1,520	1,620	2,240	1,080	492	432
6				1,920	1,920	840	1,620	1,670	2,180	1,040	489	429
7				1,720	1,200	802	1,480	1,870	2,130	1,040	486	349
8				1,670	1,300	802	1,520	1,820	2,180	1,000	483	530
9				1,970	1,160	840	1,480	1,720	2,400	1,000	510	475
10				1,770	960	880	1,620	1,620	2,300	1,000	478	442
11				2,350	1,080	960	1,920	1,670	2,130	1,000	475	414
12			2,180	2,130	1,040	1,520	2,130	1,620	1,720	960	500	394
13			3,980	1,920	1,000	3,260	2,130	1,620	1,620	920	520	392
14			2,840	1,770	920	5,770	2,300	1,570	1,620	880	467	432
15			2,130	1,520	1,000	13,500	2,240	1,820	1,570	880	490	430
16			1,770	1,430	1,250	8,150	2,400	2,300	1,520	840	461	428
17			1,570	1,480	1,380	5,120	2,790	2,130	1,570	802	430	396
18			1,430	1,520	1,380	3,620	3,140	2,520	1,720	802	410	393
19			1,340	1,720	1,160	2,900	3,020	2,460	1,820	802	430	377
20			1,430	2,300	1,000	2,680	3,080	2,350	1,870	802	450	350
21			4,340	1,870	960	2,240	2,790	2,300	1,820	840	447	384
22			7,720	1,720	960	2,020	2,570	2,130	1,820	840	420	370
23			7,720	1,620	920	1,770	2,240	1,920	1,770	802	426	342
24			6,040	1,380	880	2,080	3,500	1,920	1,620	765	393	340
25			4,730	1,250	960	2,020	2,840	1,870	1,570	695	390	320
26			6,740	1,200	1,000	1,970	2,620	1,870	1,480	630	410	318
27			4,220	1,200	1,430	1,870	2,350	1,920	1,720	600	405	316
28			3,260	1,080	1,340	1,820	2,180	1,920	3,980	600	400	314
29			2,740	1,200	1,200	2,020	2,020	1,970	3,560	570	690	330
30			2,240	1,080	-----	1,870	1,920	1,820	2,790	600	790	350
31			1,820	1,040	-----	1,770	-----	1,970	-----	570	645	-----
1908-9.												
1	395	1,580	634	960	938	1,650	2,000	2,160	2,770	686	506	361
2	518	1,160	518	882	1,020	1,900	1,740	2,210	2,490	653	478	382
3	441	1,000	491	1,160	1,060	1,650	1,500	2,370	2,370	622	478	382
4	441	734	441	1,580	1,060	1,500	1,410	2,830	2,160	622	453	361
5	395	634	418	1,250	978	1,320	1,410	2,540	1,790	591	428	340
6	374	574	418	1,080	938	1,270	1,360	2,100	1,700	826	428	340
7	332	545	418	960	862	1,270	1,320	1,900	1,600	938	405	320
8	324	466	466	844	862	1,320	1,320	1,790	1,500	938	405	320
9	332	418	418	770	790	1,500	1,360	1,840	1,410	978	405	300
10	332	395	374	734	790	1,360	1,360	1,950	1,360	978	428	361
11	395	374	395	734	755	1,190	1,320	2,100	1,360	1,100	405	382
12	466	352	1,390	700	755	1,140	1,360	1,950	1,320	938	405	453
13	770	352	1,530	666	720	1,100	1,460	1,790	1,140	826	382	428
14	1,390	332	1,300	634	790	1,100	1,410	1,740	1,100	790	382	405
15	1,160	332	806	1,040	938	1,060	1,410	1,650	1,060	720	428	361
16	1,120	312	666	1,780	2,160	1,060	1,460	1,650	1,060	686	428	340
17	844	332	603	2,680	3,420	1,100	1,320	1,740	1,020	686	405	320
18	666	1,300	545	4,160	3,480	1,230	1,100	1,650	978	622	405	300
19	844	734	466	4,930	2,370	1,190	1,140	1,600	900	562	428	506
20	1,520	1,000	466	6,740	1,900	1,140	1,190	1,500	900	453	405	653
21	1,040	1,160	491	6,140	1,740	1,140	1,230	1,500	862	533	405	506
22	882	1,340	518	4,780	1,650	1,100	1,230	1,460	826	591	382	428
23	770	1,120	545	3,180	2,370	1,060	1,270	1,410	826	562	382	340
24	666	960	518	2,260	3,060	1,060	1,230	1,500	790	533	405	320
25	634	844	466	1,900	2,600	1,100	1,230	1,650	790	562	405	320
26	666	734	1,300	1,740	1,740	1,190	1,700	1,900	790	622	506	320
27	666	634	1,440	1,500	1,650	1,230	4,650	2,210	755	653	478	300
28	634	603	2,520	1,360	1,550	1,140	3,780	2,260	720	653	361	300
29	634	603	1,880	1,230	-----	1,460	2,710	2,320	686	622	340	361
30	734	734	1,480	1,100	-----	1,700	2,100	2,490	686	562	361	382
31	2,630	-----	1,250	978	-----	1,840	-----	2,830	-----	562	361	-----

Daily discharge, in second-feet, of Sandy River below Salmon River, near Brightwood, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	361	2,160	3,800	880	1,570	9,950	1,870	1,480	960	540	388	325
2.....	340	5,810	2,840	920	1,250	8,000	1,970	1,430	920	510	388	325
3.....	300	4,780	2,130	880	880	6,740	2,020	2,460	920	510	388	365
4.....	300	3,060	1,670	840	765	6,250	2,180	2,300	880	510	388	345
5.....	361	2,540	1,570	840	730	5,970	2,240	2,130	840	485	388	325
6.....	533	2,000	1,570	802	730	4,220	2,400	1,870	802	510	388	325
7.....	622	1,790	1,520	765	802	2,840	2,130	1,670	730	510	388	308
8.....	382	1,700	1,480	730	880	2,740	2,080	1,670	695	540	388	325
9.....	361	1,650	1,430	695	960	2,790	2,240	1,620	662	570	410	325
10.....	361	1,740	1,340	662	960	2,790	2,460	2,130	695	540	388	325
11.....	382	1,600	2,740	662	1,000	2,960	2,520	2,080	1,200	540	388	308
12.....	382	1,460	6,040	630	1,040	3,500	2,570	1,820	1,080	510	388	308
13.....	361	1,270	5,060	600	2,130	3,680	2,520	1,670	880	510	388	308
14.....	340	1,100	3,140	600	1,380	3,800	2,400	1,620	765	510	365	308
15.....	340	978	2,740	600	1,040	3,680	2,130	1,480	730	510	345	325
16.....	320	862	2,180	570	960	3,560	2,020	1,380	695	485	345	345
17.....	320	900	1,820	570	1,080	3,380	1,970	1,240	662	485	365	308
18.....	320	3,780	1,670	730	1,300	3,020	2,130	1,250	662	485	365	308
19.....	361	7,240	1,520	1,380	1,300	2,740	2,300	1,160	802	476	388	308
20.....	622	6,210	1,430	1,620	1,250	2,840	2,350	1,120	730	468	365	325
21.....	591	6,010	1,380	2,080	1,380	2,020	2,350	1,120	695	460	345	365
22.....	478	14,300	1,250	3,020	1,520	3,080	2,520	1,080	662	460	388	345
23.....	405	8,600	1,250	4,280	1,820	3,020	2,620	1,120	630	460	365	325
24.....	361	9,500	1,120	3,980	2,520	2,740	2,520	1,160	630	435	365	308
25.....	361	5,120	1,040	2,900	2,840	2,570	2,460	1,120	600	435	345	308
26.....	340	3,560	960	2,460	2,620	2,080	2,350	1,040	600	435	345	290
27.....	320	2,900	920	2,180	2,740	1,870	2,080	1,000	570	410	365	290
28.....	361	4,800	840	1,920	4,660	1,770	1,820	960	570	410	388	308
29.....	382	4,220	880	1,770	-----	1,620	1,770	960	540	410	365	308
30.....	506	4,400	1,040	1,870	-----	1,520	1,670	1,000	540	410	345	325
31.....	2,210	-----	1,000	1,770	-----	1,380	-----	1,000	-----	388	325	-----

NOTE.—Daily discharge determined as follows: Dec. 12, 1907, to July 31, 1908, and Nov. 22, 1909, to Sept. 30, 1910, from rating curves well defined between 280 and 3,000 second-feet; Aug. 1 to Sept. 30, 1908, by indirect method for shifting channels; Oct. 1, 1908, to Jan. 20, 1909, from curve fairly well defined between 300 and 1,000 second-feet; Jan. 21 to Nov. 21, 1909, from fairly well defined curve.

Monthly discharge of Sandy River below Salmon River near Brightwood, Oreg., for 1907-1910.

[Drainage area, 247 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1907-8.							
December 12-31.....	7,720	1,340	3,510	14.2	10.56	139,000	A.
January.....	2,350	1,040	1,630	6.60	7.61	100,000	B.
February.....	1,920	880	1,120	4.53	4.89	64,400	A.
March.....	13,500	802	2,530	10.2	11.76	156,000	B.
April.....	3,500	1,480	2,220	8.99	10.03	132,000	B.
May.....	2,520	1,570	1,920	7.77	8.96	118,000	B.
June.....	3,980	1,480	2,120	8.58	9.57	126,000	B.
July.....	1,250	570	877	3.55	4.09	53,900	A.
August.....	790	390	492	1.99	2.29	30,300	C.
September.....	580	314	406	1.64	1.83	24,200	C.
The period.....	-----	-----	-----	-----	-----	944,000	-----

Monthly discharge of Sandy River below Salmon River near Brightwood, Oreg., for 1907-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1908-9.							
October.....	2,630	324	743	3.01	3.47	45,700	B.
November.....	1,580	312	722	2.92	3.26	43,000	B.
December.....	2,520	374	812	3.29	3.79	49,900	B.
January.....	6,740	634	1,950	7.90	9.11	120,000	C.
February.....	3,480	720	1,530	6.19	6.45	85,000	C.
March.....	1,900	1,060	1,290	5.22	6.02	79,300	C.
April.....	4,650	1,100	1,640	6.64	7.41	97,600	C.
May.....	2,830	1,410	1,950	7.90	9.11	120,000	C.
June.....	2,770	686	1,260	5.10	5.69	75,000	C.
July.....	1,100	453	699	2.83	3.26	43,000	B.
August.....	506	340	415	1.68	1.94	25,500	A.
September.....	653	300	373	1.51	1.68	22,200	A.
The year.....	6,740	300	1,120	4.53	61.19	806,000	
1909-10.							
October.....	2,210	300	451	1.83	2.11	27,700	A.
November.....	14,300	862	3,870	15.7	17.52	230,000	C.
December.....	6,040	840	1,920	7.77	8.96	118,000	B.
January.....	4,280	570	1,430	5.79	6.68	87,900	B.
February.....	4,660	730	1,500	6.07	6.32	83,300	B.
March.....	9,950	1,380	3,550	14.4	16.60	218,000	C.
April.....	2,620	1,670	2,220	8.99	10.03	132,000	C.
May.....	2,460	960	1,460	5.91	6.81	89,800	B.
June.....	1,200	540	745	3.02	3.37	44,300	B.
July.....	570	388	481	1.95	2.25	29,600	A.
August.....	410	325	372	1.51	1.74	22,900	A.
September.....	365	290	321	1.30	1.47	19,100	B.
The year.....	14,300	290	1,530	6.19	83.86	1,100,000	

SANDY RIVER ABOVE BULL RUN RIVER, NEAR BULL RUN, OREG.

Location.—In sec. 12, T. 2 S., R. 4 E., 100 feet above the proposed dam site, half a mile below the mouth of Cedar Creek, 2 miles above the mouth of Bull Run River, and 2 miles southwest of Bull Run post office.

Records available.—May 8 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Staff in two sections; the lower inclined, the upper vertical.

Channel.—Gravel and bowlders; control practically permanent.

Discharge measurements.—Made from cable at gage.

Accuracy.—Results excellent.

Cooperation.—Gage-height record furnished by the Mount Hood Railway & Power Co.

Discharge measurements of Sandy River above Bull Run River, near Bull Run, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
May 13	John Dubuis.....	<i>Feet.</i> 2.90	<i>Sec.-ft.</i> 1,680	June 28	John Dubuis.....	<i>Feet.</i> 1.70	<i>Sec.-ft.</i> 568
31	.....do.....	2.20	949	Aug. 19	F. F. Henshaw.....	1.30	386

NOTE.—Measurements of May 13 and 31 made from raft, others from cable.

Daily gage height, in feet, of Sandy River above Bull Run River, near Bull Run, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.		2.12	1.66	1.36	1.25	16.	2.60	2.10	1.61	1.26	1.14
2.		2.02	1.66	1.36	1.25	17.	2.55	2.15	1.58	1.28	1.24
3.		1.98		1.39	1.19	18.	2.48	2.22	1.52	1.30	1.21
4.		1.98		1.38	1.20	19.	2.42	2.50	1.52	1.35	1.20
5.		2.05	1.61	1.38	1.22	20.	2.38	2.52	1.56	1.35	1.25
6.		2.00	1.64	1.38	1.22	21.	2.32	2.70	1.60	1.32	1.45
7.		1.92	1.68	1.38	1.15	22.	2.30	2.65	1.54	1.28	1.39
8.	3.15	1.88	1.66	1.38	1.12	23.	2.35	2.48	1.46	1.25	1.26
9.	3.10	1.88	1.68	1.41	1.14	24.	2.38	2.12	1.48	1.23	1.24
10.	3.40	1.88	1.68	1.41	1.15	25.	2.32	1.80	1.46	1.18	1.19
11.	3.25	2.55	1.66	1.38	1.12	26.	2.25	1.78	1.42	1.27	1.14
12.	3.02	2.28	1.64	1.35	1.10	27.	2.30	1.78	1.42	1.25	1.14
13.	2.90	2.05	1.58	1.35	1.11	28.	2.18	1.72	1.42	1.27	1.13
14.	2.85	2.00	1.58	1.30	1.11	29.	2.20	1.70	1.41	1.28	1.10
15.	2.70	2.05	1.58	1.27	1.12	30.	2.15	1.74	1.38	1.27	1.20
						31.	2.12		1.38	1.27	

NOTE.—Log jam June 15 to 25.

Daily discharge, in second-feet, of Sandy River above Bull Run River, near Bull Run, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.		896	566	412	365	16.	1,340	774	536	369	324
2.		816	560	412	365	17.	1,290	761	520	377	361
3.		786	552	426	342	18.	1,220	749	490	385	349
4.		786	544	421	345	19.	1,160	736	490	408	345
5.		840	536	421	353	20.	1,120	723	510	408	365
6.		800	554	421	353	21.	1,070	710	530	394	455
7.		744	578	421	328	22.	1,050	698	500	377	426
8.	1,980	716	566	421	317	23.	1,100	685	460	365	369
9.	1,920	716	578	435	324	24.	1,120	672	470	357	361
10.	2,320	716	578	435	328	25.	1,070	659	460	338	342
11.	2,120	1,290	566	421	317	26.	1,000	646	440	373	324
12.	1,820	1,030	554	408	310	27.	1,050	646	440	365	324
13.	1,680	840	520	408	314	28.	944	604	440	373	320
14.	1,620	800	520	385	314	29.	960	590	435	377	310
15.	1,450	787	520	373	317	30.	920	618	421	373	345
						31.	896		421	373	

NOTE.—Daily discharge determined from a rating curve well defined between 380 and 4,000 second-feet. Discharge interpolated June 15 to 25.

Monthly discharge of Sandy River above Bull Run River, near Bull Run, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
May 7-31.....	2,320	896	1,340	66,400	A.
June.....	1,290	590	761	45,300	A.
July.....	578	421	511	31,400	A.
August.....	435	338	395	24,300	A.
September.....	455	310	344	20,500	A.
The period.....				188,000	

SANDY RIVER BELOW BULL RUN RIVER, NEAR BULL RUN, OREG.

Location.—In sec. 30, T. 1 S., R. 5 E., about 1,000 feet below the mouth of Bull Run River and 1½ miles northwest of Bull Run.

Records available.—April 27 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Staff in two sections, the lower section vertical, the upper inclined.

Channel.—Rocks and gravel; may shift slightly.

Discharge measurements.—Made from footbridge just below gage.

Diversions.—The pipe line for the municipal water supply of Portland diverted about 40 second-feet around the station in 1910.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by the Mount Hood Railway & Power Co.

Discharge measurements of Sandy River below Bull Run River, near Bull Run, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec. ft.</i>			<i>Feet.</i>	<i>Sec. ft.</i>
May 9	John Dubuis.....	3.00	2,860	June 17	Stevens and Dubuis....	1.57	987
31	.....do.....	1.80	1,210	Aug. 20	F. F. Henshaw.....	.87	460

Daily gage height, in feet, of Sandy River below Bull Run River, near Bull Run, Oreg., for 1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1		2.65	1.90	1.80	0.95	0.75	16		2.40	1.70	1.23	0.90	0.69
2		2.45	1.80	1.30	.94	.75	17		2.30	1.70	1.23	.90	.80
3		3.45	1.70	1.30	.94	.75	18		2.20	1.60	1.23	.90	.80
4		4.05	1.60	1.30	.93	.72	19		2.25	1.70	1.23	.90	.79
5			1.60	1.30	.92	.71	20		2.10	1.70	1.23	.89	.80
6			1.60	1.30	.91	.70	21		2.00	1.60	1.23	.89	.80
7		3.30	1.50	1.30	.90	.70	22		2.00	1.60	1.23	.89	.75
8		3.10	1.50	1.30	.90	.70	23		2.00	1.60	1.23	.89	.70
9		3.45	1.50	1.30	.90	.70	24		2.00	1.50	1.23	.88	.70
10		3.60	1.50	1.25	.90	.70	25		2.00	1.50	1.23	.84	.65
11		3.35	2.60	1.25	.90	.70	26		2.00	1.50	1.22	.81	.65
12		3.95	2.70	1.25	.90	.70	27	2.90	2.00	1.60	1.21	.80	.65
13		2.80	1.80	1.24	.90	.69	28	2.75	1.80	1.70	1.00	.80	.65
14		2.70	1.70	1.24	.90	.69	29	2.55	2.00	1.80	1.00	.80	.65
15		2.60	1.70	1.23	.90	.68	30	2.70	2.00	1.80	.95	.78	.69
							31		2.00		.95	.75	

NOTE.—Discharge relation affected by jam of ties on riffle below gage June 27 to July 2.

Daily discharge, in second-feet, of Sandy River below Bull Run River, near Bull Run Oreg., for 1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1		2,300	1,330	1,220	510	405	16		1,940	1,120	694	480	376
2		2,010	1,220	750	504	405	17		1,810	1,120	694	480	430
3		3,690	1,120	750	504	405	18		1,680	1,020	694	480	430
4		5,000	1,020	750	498	390	19		1,740	1,120	694	480	425
5		4,500	1,020	750	492	385	20		1,560	1,120	694	475	430
6		4,000	1,020	750	486	380	21		1,440	1,020	694	475	430
7		3,400	920	750	480	380	22		1,440	1,020	694	475	405
8		3,030	920	750	480	380	23		1,440	1,020	694	475	380
9		3,690	920	750	480	380	24		1,440	920	694	470	380
10		4,000	920	710	480	380	25		1,440	920	694	450	360
11		3,500	2,220	710	480	380	26		1,440	920	686	435	360
12		2,780	2,370	710	480	380	27	2,690	1,440	1,020	678	430	360
13		2,530	1,220	702	480	376	28	2,450	1,220	1,120	540	430	360
14		2,370	1,120	702	480	376	29	2,150	1,440	1,220	540	430	360
15		2,220	1,120	694	480	372	30	2,370	1,440	1,220	510	420	376
							31		1,440		510	405	

NOTE.—Daily discharge determined from a rating curve well defined between 450 and 5,500 second-feet.

Monthly discharge of Sandy River below Bull Run River, near Bull Run, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
April 27-30.....	2,690	2,150	2,420	1,920	B.
May.....	5,000	1,220	2,370	146,000	B.
June.....	2,370	920	1,150	68,400	B.
July.....	1,220	510	705	43,300	B.
August.....	510	405	471	29,000	B.
September.....	430	360	388	23,100	B.
The period.....				312,000	

STILL CREEK NEAR ROWE, OREG.

Location.—In sec. 24, T. 3 S., R. 8½ E., half a mile above Summit House, about 1½ miles southeast of Government Camp, and about 11 miles southeast of Rowe.

Records available.—May 23 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Sand and gravel; shifting.

Discharge measurements.—Made from a foot log or by wading near the gage.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by the Mount Hood Railway & Power Co.

Discharge measurements of Still Creek near Rowe, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
May 23	John Dubuis.....	1.20	20.3	Aug. 17	F. F. Henshaw.....	0.93	12.7
July 19	F. C. Ebert.....	1.07	12.8	17	.....do.....	.94	12.1
19	B. F. Heintzleman.....	1.07	12.1				

Daily gage height, in feet, of Still Creek near Rowe, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		1.20	1.11	1.05	0.93	16.....		1.15	1.10	0.94	0.90
2.....		1.20	1.11	1.05	.93	17.....		1.15	1.10	.92	.91
3.....		1.19	1.11	1.05	.93	18.....		1.15	1.10	.92	.90
4.....		1.19	1.11	1.05	.93	19.....		1.25	1.10	.92	.90
5.....		1.19	1.11	1.04	.93	20.....		1.20	1.09	.92	.92
6.....		1.18	1.11	1.03	.93	21.....		1.20	1.09	.92	.94
7.....		1.16	1.11	1.02	.94	22.....		1.18	1.09	.92	.92
8.....		1.15	1.11	1.00	.93	23.....	1.20	1.15	1.08	.92	.91
9.....		1.15	1.11	.97	.93	24.....	1.22	1.15	1.08	.92	.91
10.....		1.15	1.11	.96	.93	25.....	1.22	1.17	1.08	.92	.91
11.....		1.20	1.10	.95	.92	26.....	1.20	1.15	1.08	.92	.91
12.....		1.18	1.10	.95	.92	27.....	1.20	1.13	1.06	.92	.91
13.....		1.18	1.10	.95	.92	28.....	1.20	1.12	1.05	.92	.91
14.....		1.18	1.10	.95	.92	29.....	1.20	1.12	1.05	.94	.91
15.....		1.16	1.10	.95	.91	30.....	1.20	1.12	1.05	.94	.91
						31.....	1.20		1.05	.93	

Daily discharge, in second-feet, of Still Creek near Rowe, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		20	14	12	13	16.....		17	13	12	12
2.....		20	14	12	13	17.....		17	13	12	12
3.....		19	14	12	13	18.....		17	13	12	12
4.....		19	14	13	13	19.....		19	13	12	12
5.....		19	14	13	13	20.....		18	13	12	12
6.....		19	14	13	13	21.....		18	13	12	13
7.....		18	14	13	13	22.....		18	13	12	12
8.....		18	14	12	13	23.....	20	17	13	12	12
9.....		18	14	12	13	24.....	21	16	13	12	12
10.....		17	14	12	13	25.....	21	17	13	12	12
11.....		19	14	12	12	26.....	20	16	13	12	12
12.....		18	14	12	12	27.....	20	16	13	12	12
13.....		18	14	12	12	28.....	20	15	12	12	12
14.....		18	14	12	12	29.....	20	15	12	13	12
15.....		17	13	12	12	30.....	20	15	12	13	12
						31.....	20		12	13	

NOTE.—Daily discharge May 23 to Aug. 16 determined by indirect method for shifting channels; discharge for remainder of period determined from a fairly well defined rating curve.

Monthly discharge of Still Creek near Rowe, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
May 23-31.....	21	20	20.2	361	B.
June.....	20	15	17.6	1,050	B.
July.....	14	12	13.3	818	B.
August.....	13	12	12.2	750	B.
September.....	13	12	12.4	738	B.
The period.....				3,720	

SALMON RIVER NEAR ROWE, OREG.

Location.—In sec. 31, T. 3 S., R. 9 E., about 4 miles southeast of Government Camp and 14 miles southeast of Rowe.

Records available.—May 24 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Shifting gravel.

Discharge measurements.—Made by wading or from foot log near the gage.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by the Mount Hood Railway & Power Co.

Discharge measurements of Salmon River near Rowe, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
May 23	John Dubuis.....	1.30	66.6	July 19	F. C. Ebert.....	0.80	29.2
July 19	B. F. Heintzleman ....	.80	29.1	Aug. 17	F. F. Henshaw.....	.60	22.2

Daily gage height, in feet, of Salmon River near Rowe, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		1.12	0.90	0.70	0.63	16.....		1.02	0.82	0.65	0.60
2.....		1.10	.85	.70	.63	17.....		1.00	.81	.62	.61
3.....		1.08	.85	.70	.63	18.....		.95	.81	.64	.60
4.....		1.05	.85	.70	.62	19.....		1.10	.80	.64	.60
5.....		1.10	.85	.69	.62	20.....		1.05	.80	.64	.67
6.....		1.08	.85	.69	.62	21.....		1.02	.80	.64	.69
7.....		1.05	.85	.69	.63	22.....		1.02	.78	.63	.66
8.....		1.03	.85	.69	.62	23.....		1.02	.78	.63	.62
9.....		1.02	.85	.69	.62	24.....	1.35	1.02	.76	.62	.60
10.....		1.02	.85	.69	.62	25.....	1.35	1.05	.74	.62	.59
11.....		1.35	.83	.68	.62	26.....	1.25	1.02	.70	.62	.59
12.....		1.10	.83	.68	.61	27.....	1.25	1.00	.70	.62	.59
13.....		1.02	.82	.68	.61	28.....	1.20	1.00	.70	.62	.59
14.....		1.02	.82	.67	.61	29.....	1.20	.90	.70	.64	.58
15.....		1.02	.82	.66	.60	30.....	1.15	.90	.70	.64	.58
						31.....	1.13		.70	.63	

Daily discharge, in second-feet, of Salmon River near Rowe, Oreg., for 1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1.....		53	36	25	22	16.....		45	31	23	21
2.....		51	33	25	22	17.....		43	31	22	21
3.....		49	33	25	22	18.....		40	31	23	21
4.....		47	33	25	22	19.....		51	30	23	21
5.....		51	33	25	22	20.....		47	30	23	24
6.....		49	33	25	22	21.....		45	30	23	25
7.....		47	33	25	22	22.....		45	29	22	23
8.....		45	33	25	22	23.....		45	29	22	22
9.....		45	33	25	22	24.....	74	45	28	22	21
10.....		45	33	25	22	25.....	74	47	27	22	21
11.....		74	32	24	22	26.....	64	45	25	22	21
12.....		51	32	24	21	27.....	64	43	25	22	21
13.....		45	31	24	21	28.....	60	43	25	22	21
14.....		45	31	24	21	29.....	60	36	25	23	20
15.....		45	31	23	21	30.....	56	36	25	23	20
						31.....	54		25	22	

NOTE.—Daily discharge determined from rating curves applicable as follows: May 24 to Dec. 8, well defined from 20 to 80 second-feet.

Monthly discharge of Salmon River near Rowe, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
May 24-31.....	74	54	63.2	1,000	A.
June.....	74	36	46.6	2,770	A.
July.....	36	25	30.2	1,860	A.
August.....	25	22	23.5	1,440	A.
September.....	25	20	21.6	1,290	A.
The period.....				8,360	

BULL RUN RIVER NEAR BULL RUN, OREG.

Location.—In sec. 25, T. 1 S., R. 5 E., $1\frac{1}{4}$ miles above the intake of pipe line of Portland water supply, about half a mile below South Fork.

Records available.—August 20, 1907, to September 30, 1910; also reading on a gage installed by the city water department January 5, 1895, to November 13, 1906.

Drainage area.—102 square miles.

Gage.—Friez automatic since August 1, 1909; inclined staff about 1,000 feet above the screen house at the head works since 1907. The earlier readings were made on gages at the same location as the inclined staff and have been referred as nearly as possible to the same datum.

Channel.—Gravel and bowlders at upper gage; shifts somewhat; large rocks at the lower gage, but the discharge relation during the low-water periods has been affected by backwater from a temporary brush and log diversion dam constructed each year and washed out by the first high water in the fall.

Discharge measurements.—Made from cable at site of recording gage or by wading.

Accuracy.—Results good since 1907. Earlier records uncertain on account of question as to permanency of channel and especially as to gage datum. Low-water results should not be given much weight, but the total yearly run-off is probably nearly as good as for later years.

Cooperation.—Gage heights furnished by Portland water board; the entire record prior to August, 1907, worked up by the water engineer of the city.

Discharge measurements of Bull Run River near Bull Run, Oreg., 1906-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906. Sept. 1	.....	<i>Feet.</i> <i>a</i> 0.40	<i>Sec.-ft.</i> <i>b</i> 102	1909. July 27	J. C. Stevens.....	<i>Feet.</i> <i>d</i> 3.28	<i>Sec.-ft.</i> 219
1907. Aug. 20	Stevens and Clark.....	.12	100	Sept. 10	R. B. Post.....	<i>e</i> 2.91	118
Dec. 10	McGlashan and Ellsworth.....	2.95	1,080	1910. July 3	Stevens and Ebert.....	3.03	174
Dec. 11	.....do.....	4.40	2,500	Aug. 19	F. F. Henshaw.....	2.66	79.2
1908. July 23	H. D. McGlashan.....	.53	159				
Oct. 7 ^c	L. R. Allen.....	.24	82				

a Observer's reading for day.

b Mean of two measurements.

c Made with defective meter.

d Staff gage read 0.95 foot.

e Staff gage read 0.63 foot.

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1.....					1.3	2.6	2.8	2.6	2.9	1.1	0.6	0.5
2.....					1.5	2.6	2.8	2.9	2.9	1.1	.6	.5
3.....					1.6	2.6	3.3	3.3	2.6	1.1	.6	.6
4.....					1.6	2.2	3.3	4.7	2.4	1.0	.6	.6
5.....				2.6	1.5	2.2	2.8	4.2	2.0	1.4	.6	1.0
6.....				2.5	1.4	2.1	2.7	5.0	2.0	1.4	.6	.6
7.....				2.1	1.3	2.1	2.7	4.0	2.0	1.0	.6	.6
8.....				2.1	1.4	2.1	2.6	4.2	2.0	1.0	.6	.6
9.....				5.3	1.4	2.1	2.7	3.7	1.7	1.0	.5	.6
10.....				4.3	1.3	2.1	2.9	3.4	1.7	1.0	.5	.6
11.....				5.2	1.2	2.0	2.6	3.1	1.7	1.0	.5	.7
12.....				7.4	1.3	1.9	2.6	3.0	1.5	.9	.5	.8
13.....				5.9	1.3	1.7	2.7	3.0	1.4	.9	.5	.8
14.....				5.0	1.2	1.6	2.5	2.7	1.4	.8	.5	1.3
15.....				3.9	1.2	1.6	2.5	2.7	1.6	.8	.5	1.0
16.....				3.2	1.6	1.5	4.2	2.7	2.0	.8	.4	1.0
17.....				2.9	2.1	1.4	3.7	2.7	1.8	.8	.4	.8
18.....				2.6	3.9	1.4	3.4	2.5	1.6	.8	.4	.7
19.....				2.4	3.6	1.4	3.3	2.2	1.5	.8	.4	.6
20.....				2.2	3.2	1.4	3.0	2.2	1.5	.8	.4	1.3
21.....				2.1	3.2	1.6	2.9	2.0	1.4	.8	.4	1.1
22.....				2.0	3.2	1.4	2.9	2.4	1.4	.8	.4	1.1
23.....				1.8	3.2	1.8	3.1	2.1	1.3	.7	.4	1.0
24.....				1.7	3.8	2.2	3.4	2.0	1.3	.7	.4	1.0
25.....				1.6	3.2	3.1	3.3	2.0	1.3	.7	.4	1.4
26.....				1.6	2.7	3.4	3.1	4.3	1.3	.6	.4	1.1
27.....				1.5	2.7	3.8	3.0	4.3	1.2	.6	.4	1.1
28.....				1.3	2.7	4.5	2.8	3.7	1.1	.6	.4	1.1
29.....				1.3	.....	3.5	2.7	3.5	1.1	.6	.4	.9
30.....				1.3	.....	3.0	2.5	3.5	1.1	.6	.5	.8
31.....				1.4	.....	2.9	.....	3.3	.....	.6	.5	.....

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.....	0.7	0.3	4.2	5.0	4.0	3.5	2.3	3.2	3.2	1.8	0.6	- 0.8
2.....	.6	2.0	3.2	3.7	3.3	3.0	2.3	3.5	3.0	1.8	.7	.7
3.....	.6	.8	2.8	3.3	3.0	2.7	2.2	4.0	3.0	1.7	.7	.6
4.....	.6	.7	2.6	3.7	2.0	2.5	2.1	4.4	2.9	1.6	.8	.6
5.....	.6	.6	2.3	3.7	5.0	2.5	2.1	4.4	3.5	1.6	.8	.5
6.....	.6	.6	4.1	5.3	4.3	2.3	2.2	4.2	3.7	1.5	.8	.5
7.....	.6	.6	3.9	5.0	3.6	2.3	2.5	4.0	3.3	1.4	.8	.5
8.....	.6	.6	3.2	5.0	3.3	2.7	3.0	3.5	5.0	1.4	.7	.5
9.....	.6	.6	2.9	5.2	3.2	3.5	2.7	3.5	4.0	1.3	.7	.4
10.....	.6	1.2	4.5	4.7	2.9	3.3	2.7	3.2	3.8	1.3	.6	.4
11.....	.6	.9	3.7	4.0	2.7	3.1	2.8	4.1	3.5	1.3	.6	.4
12.....	.6	1.0	7.6	3.3	2.7	3.0	5.0	4.0	3.2	1.2	.6	.4
13.....	.5	1.3	4.3	3.0	2.6	2.9	8.0	3.5	3.2	1.2	.6	.4
14.....	.5	4.6	4.0	2.8	3.5	2.8	5.0	3.3	2.9	1.2	.6	.4
15.....	.4	4.3	3.6	2.6	3.5	2.6	4.0	3.2	2.9	1.0	.5	1.2
16.....	.4	3.0	3.2	2.4	3.8	2.5	3.5	3.3	2.9	1.0	.5	1.2
17.....	.4	2.0	2.8	3.3	4.0	2.4	3.1	3.2	3.0	.9	.5	1.0
18.....	.4	2.0	2.6	3.7	3.5	2.3	2.9	3.2	2.8	.9	.4	.8
19.....	.3	1.8	3.7	3.7	3.2	2.5	2.6	3.2	2.7	.9	.4	.7
20.....	.3	1.6	4.8	5.3	3.0	3.0	2.6	3.0	2.6	.8	.4	.6
21.....	.3	1.9	3.9	5.0	3.1	4.0	2.5	3.0	2.5	.8	.4	.6
22.....	.3	1.6	3.2	4.0	3.1	3.3	2.7	3.2	2.5	.8	.4	.6
23.....	.3	1.6	3.8	3.7	3.0	3.3	2.8	3.8	2.4	.8	.4	.6
24.....	.3	1.3	3.2	3.3	4.9	6.0	2.8	3.5	2.3	.7	.4	.6
25.....	.3	1.1	3.0	3.1	4.8	4.8	2.8	3.3	2.3	.7	.4	.6
26.....	.3	1.1	3.0	3.0	5.4	4.0	2.8	3.3	2.3	.7	.4	.4
27.....	.3	3.8	7.5	3.5	4.8	3.5	2.9	3.2	2.3	.7	.4	.4
28.....	.3	3.0	4.6	3.4	5.0	3.1	3.2	3.4	2.3	.6	.4	.4
29.....	.3	2.6	3.6	3.4	4.2	3.0	2.9	3.5	2.1	.6	.4	.4
30.....	.3	3.2	3.0	3.0	-----	2.7	2.8	3.7	2.0	.6	.4	.4
31.....	.3	-----	3.1	2.7	-----	2.5	-----	3.5	-----	.6	.4	.4
1896-97.												
1.....	.6	2.9	4.0	3.2	3.2	2.8	2.7	2.8	1.5	1.9	.4	.7
2.....	.6	4.3	6.0	2.7	3.2	2.8	2.7	2.8	1.5	3.0	.4	.6
3.....	.6	3.5	6.0	2.5	3.5	2.8	2.7	2.8	1.5	3.0	.4	1.2
4.....	.5	3.6	6.0	2.5	5.0	2.8	2.8	2.6	1.5	2.6	.5	.8
5.....	.5	3.5	5.0	3.2	3.5	2.7	2.9	2.6	1.5	2.6	.5	2.8
6.....	.5	2.9	4.8	3.2	4.6	2.6	3.5	2.6	1.5	2.8	.5	2.0
7.....	.4	2.6	5.2	3.2	4.2	2.6	3.8	2.6	1.5	2.8	.5	1.9
8.....	.4	9.0	6.0	3.2	3.5	2.5	3.5	2.6	1.5	2.6	.5	1.7
9.....	.3	6.5	5.1	2.8	3.2	2.4	3.5	2.6	1.5	2.2	.4	1.5
10.....	.3	5.0	4.6	2.7	3.2	2.4	4.2	2.9	1.5	2.2	.4	1.3
11.....	.6	4.3	4.8	2.6	6.0	2.2	3.7	2.9	1.5	1.9	.4	1.2
12.....	.5	3.7	5.4	2.6	5.5	2.2	3.7	2.9	1.7	1.9	.4	1.1
13.....	.4	3.9	5.8	2.4	4.2	2.2	3.7	2.9	1.7	1.7	.4	1.1
14.....	.4	7.0	5.1	2.3	3.9	2.4	3.7	2.9	1.7	1.7	.4	1.0
15.....	.3	7.0	4.5	2.2	6.0	2.4	3.7	2.6	1.7	1.7	.4	.9
16.....	.3	6.5	3.8	2.1	5.5	2.7	4.3	2.6	1.9	1.7	.3	.8
17.....	.3	5.0	3.3	2.1	3.9	2.7	4.4	2.6	2.2	1.7	.3	.7
18.....	.3	4.3	3.3	2.0	3.5	2.8	4.4	2.6	2.8	1.7	.3	.7
19.....	.3	4.0	4.5	2.8	3.5	2.7	2.6	3.6	2.2	1.5	.3	.7
20.....	.3	3.3	4.5	6.0	3.2	2.7	4.6	2.6	1.9	1.5	.3	.6
21.....	.3	3.1	3.5	4.9	2.9	2.4	4.4	2.6	1.9	1.5	.3	.6
22.....	.3	4.3	3.2	3.6	2.8	2.4	3.7	2.6	1.6	1.2	.3	.6
23.....	.3	3.9	2.9	3.6	2.7	2.8	3.3	2.6	2.2	1.2	.3	.6
24.....	.3	3.5	2.7	3.6	2.7	5.5	3.0	1.8	2.2	1.0	.3	.6
25.....	.3	3.0	2.5	3.1	2.5	5.8	3.0	1.8	1.9	1.0	.3	.6
26.....	.3	2.8	2.4	2.7	2.5	5.3	3.3	1.5	1.9	.7	.3	.6
27.....	.2	2.6	2.4	2.5	2.5	4.2	3.0	1.5	1.9	.7	.3	.5
28.....	.2	2.4	2.5	2.5	2.8	4.2	2.9	1.5	1.9	.6	.3	.7
29.....	1.5	2.2	2.4	2.4	-----	3.5	2.8	1.5	1.9	.5	.7	.5
30.....	1.2	2.0	3.2	2.7	-----	3.2	2.6	1.5	1.9	.4	.7	.6
31.....	4.3	-----	2.9	3.2	-----	2.9	-----	1.5	-----	.4	.4	-----

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1	0.6	1.3	4.0	2.9	2.1	2.6	1.6	2.3	2.6	0.9	0.4	0.4
2	.6	1.3	3.1	2.6	2.1	2.6	1.6	2.3	2.3	.9	.4	.3
3	.5	1.2	2.8	2.6	2.1	2.9	1.6	2.6	2.3	.8	.4	.3
4	.5	1.1	2.6	2.4	2.3	2.9	1.6	2.6	2.0	.8	.4	.3
5	.5	1.5	6.0	2.6	3.7	2.6	1.6	2.6	2.0	.8	.4	.3
6	.5	2.3	5.4	2.9	4.5	2.5	2.0	2.3	2.0	.8	.4	.2
7	.5	2.3	5.0	2.6	5.0	2.5	2.3	2.3	2.0	.8	.4	.2
8	.4	2.3	4.6	2.4	4.0	2.5	2.3	2.1	1.8	.7	.4	.1
9	.3	3.3	4.0	2.4	3.5	2.3	2.3	2.0	1.7	.7	.4	.1
10	.3	7.0	4.3	2.4	3.5	2.0	2.3	2.3	1.6	.6	.4	.1
11	.3	5.0	5.4	2.4	3.7	2.0	2.3	2.3	1.6	.6	.3	.1
12	.5	5.6	4.5	2.0	5.0	1.9	2.6	2.3	1.6	.6	.3	.1
13	.6	6.0	4.6	2.4	4.5	1.9	2.9	2.3	1.6	.6	.3	.1
14	.6	4.0	5.0	2.6	7.2	1.8	3.0	2.3	1.5	.6	.3	.2
15	.5	3.3	4.0	3.8	5.6	1.7	3.0	2.6	1.5	.6	.3	.1
16	.4	3.1	3.2	3.5	5.6	1.6	2.9	2.5	1.8	.7	.3	.1
17	.4	5.0	2.8	3.5	4.0	1.6	2.6	2.3	1.8	.9	.3	.1
18	.3	6.0	2.7	3.0	3.5	1.5	2.6	2.6	1.5	.8	.3	.1
19	.3	6.0	2.7	4.0	3.1	1.7	2.3	2.6	1.5	.7	1.1	.1
20	.4	4.3	2.4	3.6	3.1	1.7	2.3	2.6	1.5	.6	.4	.1
21	1.9	3.5	2.3	3.2	3.1	1.7	2.3	2.6	1.5	.6	.3	1.7
22	2.3	3.2	2.2	3.9	2.9	1.6	4.2	3.0	1.4	.6	.3	1.7
23	1.7	2.9	2.2	3.6	2.6	1.5	3.7	2.6	1.4	.9	.3	1.4
24	2.3	2.7	2.7	2.4	2.5	1.6	3.4	2.3	1.3	.6	.3	1.1
25	2.1	2.3	3.2	2.3	2.5	1.5	3.7	2.3	1.3	.6	.3	1.0
26	1.9	2.0	4.0	2.1	2.5	1.4	4.2	2.3	1.2	.6	.3	.9
27	1.7	2.3	5.0	2.0	2.4	1.6	3.4	2.0	1.2	.5	.3	.7
28	1.5	2.7	6.0	1.8	3.1	1.6	3.2	2.1	1.0	.5	.3	.7
29	1.4	2.8	4.6	1.8		1.6	3.0	2.3	1.0	.5	.3	3.7
30	1.4	5.0	4.3	2.1		1.6	2.6	2.4	.9	.4	.3	4.7
31	1.3		3.4	2.1		1.6		2.4		.4	.3	
1898-99.												
1	3.5	1.7	5.2	2.7	2.9	5.0	2.0	2.5	4.2	2.3	.9	1.6
2	3.5	3.0	4.0	2.3	2.8	4.1	3.3	2.5	4.0	2.3	.9	1.6
3	2.7	3.5	3.3	2.3	2.2	4.1	4.0	2.5	4.0	2.3	.8	1.6
4	2.6	5.2	3.0	2.0	2.1	4.0	3.6	2.5	4.0	2.1	.8	1.8
5	2.0	3.7	2.7	2.0	2.0	3.5	2.8	2.5	4.0	2.1	.7	1.8
6	1.7	3.3	2.7	2.0	2.0	3.2	2.8	2.8	3.6	2.0	.7	1.8
7	1.5	3.0	2.3	2.0	1.9	3.2	2.8	2.8	3.6	1.9	.7	1.6
8	1.4	2.7	2.0	2.0	5.7	3.2	3.3	3.3	3.6	1.9	.7	1.6
9	2.0	2.3	2.0	2.0	7.3	3.2	3.3	4.0	3.6	1.9	2.4	1.5
10	1.7	2.3	1.7	3.0	5.0	2.5	4.0	3.3	3.6	1.9	1.9	1.4
11	2.0	2.0	1.7	3.0	4.1	2.5	5.1	4.0	4.0	1.8	1.7	1.3
12	3.2	2.0	1.7	3.0	4.1	2.5	5.4	2.8	4.3	1.8	1.6	1.3
13	2.3	1.7	1.5	2.7	4.1	2.5	4.0	2.8	4.0	1.8	1.4	1.4
14	4.2	1.7	1.5	2.7	4.1	2.2	3.3	2.5	3.7	1.7	1.3	1.2
15	3.5	1.7	1.5	3.4	5.0	2.2	2.8	2.5	3.7	1.7	2.9	1.0
16	3.0	2.0	1.4	5.2	4.1	2.0	3.3	2.5	3.7	1.7	1.9	1.0
17	2.3	4.7	1.4	5.0	5.0	1.8	3.3	2.8	3.6	1.6	1.8	.9
18	2.2	5.5	1.7	4.4	4.1	1.7	2.8	2.8	3.6	1.5	1.6	.8
19	2.0	4.0	3.4	4.0	4.4	1.7	2.8	3.6	3.6	1.4	1.6	.8
20	1.9	3.3	3.3	7.5	4.1	1.7	2.8	3.6	3.6	1.4	1.6	.8
21	1.7	3.0	3.0	9.0	3.5	1.7	2.8	3.3	3.3	1.3	2.0	.7
22	1.6	3.3	2.7	5.0	3.1	1.7	2.5	2.5	3.3	1.4	5.0	.7
23	1.5	4.7	2.7	4.0	3.1	1.7	2.5	3.6	3.2	1.3	2.9	.6
24	1.4	4.0	2.7	3.6	3.5	1.7	2.5	3.6	2.8	1.2	2.4	.6
25	1.4	3.3	2.7	4.0	3.5	1.6	2.8	3.6	2.8	1.2	2.3	.6
26	1.4	3.0	3.3	3.6	3.1	1.6	3.3	3.6	3.0	1.1	2.9	.6
27	1.4	3.7	5.0	3.4	4.0	1.6	3.6	4.0	2.7	1.0	2.9	.5
28	1.4	4.2	5.0	3.2	5.1	1.6	2.8	4.0	2.4	1.0	2.4	.5
29	1.4	4.2	4.0	3.1		2.0	2.8	3.7	2.4	.9	2.4	.5
30	1.4	4.7	3.4	2.9		2.0	3.6	3.6	2.4	.9	2.0	1.8
31	1.7		3.0	2.9		2.0		3.7		.9	1.8	

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899-1900.												
1.....	2.9	1.6	6.7	2.0	1.7	3.3	3.1	1.4	1.9	1.9	0.7	0.8
2.....	2.4	1.6	4.9	2.0	1.6	2.9	3.0	1.4	1.8	1.4	.7	.8
3.....	1.9	1.6	3.4	2.8	1.9	3.3	2.8	1.4	1.7	1.4	.6	.8
4.....	1.7	1.8	3.0	2.5	1.9	2.9	2.7	1.3	1.6	1.4	.6	.8
5.....	1.4	1.6	3.0	2.3	1.9	2.9	2.5	1.7	1.6	2.5	.5	.7
6.....	1.4	1.3	3.0	2.4	2.7	3.3	2.3	1.6	1.7	2.1	.5	.7
7.....	1.3	1.8	2.8	2.4	2.4	4.4	2.8	1.4	1.5	1.9	.5	.7
8.....	1.2	1.6	2.8	2.8	3.4	5.3	2.6	2.2	1.4	1.9	.5	1.4
9.....	1.0	1.6	3.0	2.4	3.4	4.2	2.4	1.3	1.4	1.6	.7	1.1
10.....	1.0	1.8	3.4	3.0	3.1	4.2	2.4	1.3	1.3	1.5	.5	.9
11.....	.9	2.1	4.9	4.3	3.4	3.8	2.4	1.3	1.3	1.5	.5	.8
12.....	.9	1.8	4.3	9.0	3.0	3.5	2.4	2.2	1.3	1.5	.5	.7
13.....	.8	2.1	3.7	6.0	2.8	3.3	2.7	3.4	1.1	1.4	.5	.7
14.....	.7	1.8	3.4	5.0	2.8	3.0	2.7	3.0	1.1	1.4	.4	1.1
15.....	.7	2.1	3.0	4.0	2.4	2.8	2.7	2.9	1.0	1.3	.4	1.1
16.....	4.7	3.0	2.8	4.7	2.2	2.6	2.6	3.0	1.7	1.2	.4	1.0
17.....	2.9	2.7	2.4	5.0	2.1	2.4	2.3	2.6	1.4	1.1	.4	1.0
18.....	4.7	4.5	2.3	4.0	2.7	2.3	2.2	2.2	1.5	1.0	.4	.9
19.....	6.3	4.9	2.3	3.8	2.7	2.3	2.2	2.1	2.1	.9	.4	.8
20.....	4.0	4.5	2.3	3.6	3.5	2.2	2.0	2.0	1.9	.9	.4	3.5
21.....	3.7	3.0	4.8	3.1	7.0	2.0	1.9	1.9	1.9	.9	.4	2.5
22.....	3.4	2.7	4.0	2.9	5.0	2.0	2.0	2.0	1.9	.8	.4	1.9
23.....	2.9	2.7	4.0	2.7	4.4	1.9	1.9	1.9	1.7	.8	.4	2.6
24.....	3.2	2.4	3.7	2.5	3.8	1.8	1.7	1.9	1.5	.8	1.3	2.3
25.....	2.9	2.2	3.4	2.3	3.7	2.0	1.7	1.8	1.5	.8	3.4	2.0
26.....	2.4	4.9	3.0	2.1	3.3	2.8	1.7	3.8	1.5	.8	2.4	1.8
27.....	1.7	5.5	2.8	2.0	2.8	2.6	1.6	3.0	1.4	.8	1.1	1.6
28.....	2.1	4.9	2.5	1.9	4.7	2.4	1.6	2.6	1.4	.8	1.0	1.5
29.....	2.0	5.5	2.3	1.8	.....	4.2	1.5	2.4	1.4	.8	.9	1.3
30.....	1.8	4.9	2.3	1.8	.....	3.5	1.4	2.2	1.9	.7	.8	1.2
31.....	1.6	.....	2.3	1.8	.....	3.3	.....	2.1	.....	.7	.8	.....
1900-1901.												
1.....	1.1	5.0	4.4	2.2	2.0	5.0	3.0	3.0	2.0	1.8	.6	.0
2.....	1.1	7.0	4.2	2.2	1.9	5.0	3.9	3.0	1.8	1.8	.5	.3
3.....	1.1	4.6	3.4	2.1	1.8	3.9	3.2	3.0	1.8	1.8	.5	.3
4.....	1.1	3.7	3.1	2.0	1.6	3.7	3.1	2.7	1.8	1.8	.5	.0
5.....	1.4	3.1	3.4	1.9	1.5	3.2	3.1	2.6	2.1	1.7	.4	.0
6.....	2.3	2.8	3.1	1.9	1.4	3.1	3.0	2.6	2.1	1.6	.4	.0
7.....	1.6	2.4	2.8	1.8	1.4	3.0	2.8	2.6	1.8	1.6	.4	.0
8.....	1.5	2.8	2.5	1.9	1.3	3.1	2.6	2.6	1.8	1.6	.4	.0
9.....	1.5	2.4	2.3	1.8	1.3	3.1	2.6	4.0	1.8	1.6	.4	.0
10.....	1.6	2.2	2.2	1.6	1.3	3.1	2.6	3.4	1.8	1.6	.3	.0
11.....	1.2	2.1	1.9	3.4	1.2	3.0	2.6	3.4	1.8	1.6	.3	.0
12.....	1.1	1.9	1.8	6.0	1.2	2.9	3.0	3.0	2.7	1.5	.3	.0
13.....	1.1	1.8	2.2	9.0	1.5	2.8	3.0	3.0	2.7	1.4	.3	.6
14.....	1.1	1.7	2.5	6.0	4.5	2.7	3.0	3.0	2.7	1.4	.3	.3
15.....	1.0	1.7	2.5	4.7	7.0	2.7	3.0	3.0	2.1	1.4	.2	.0
16.....	.9	1.7	3.1	4.0	10.5	2.7	2.6	3.6	2.1	1.4	.2	.0
17.....	.9	2.0	3.1	3.7	7.0	3.0	2.6	3.4	2.1	1.4	.2	.0
18.....	1.1	1.7	2.8	3.4	3.6	3.1	2.6	3.0	1.8	1.4	.2	.0
19.....	4.7	1.7	3.1	3.1	3.3	3.0	2.6	3.0	1.8	1.4	.2	.0
20.....	3.4	1.7	5.4	2.8	3.0	2.9	3.0	2.8	1.8	1.4	.2	.0
21.....	5.0	1.7	6.2	2.6	2.8	2.9	3.0	2.8	1.8	.9	.2	1.4
22.....	6.0	1.7	4.2	3.1	2.6	3.0	2.7	2.8	1.8	.8	.1	2.8
23.....	3.7	1.7	4.7	3.1	2.8	3.0	3.0	2.7	1.8	.8	.1	1.2
24.....	3.4	1.7	4.8	3.1	4.8	2.8	3.0	2.6	2.1	.8	.0	1.2
25.....	6.0	4.9	3.7	2.6	4.8	3.7	2.7	2.6	2.1	.7	.0	1.5
26.....	3.7	6.3	3.7	2.2	7.0	3.3	2.7	2.4	2.1	.7	.3	2.0
27.....	3.6	4.2	3.7	2.2	5.5	3.1	2.6	2.3	2.1	.6	.2	1.5
28.....	3.5	3.4	3.1	2.2	5.0	3.0	2.7	2.3	1.8	.6	.1	1.2
29.....	4.0	3.4	2.8	2.1	.....	3.0	2.7	2.2	1.8	.6	.1	1.5
30.....	6.5	5.0	2.5	2.0	.....	2.9	3.0	2.1	1.8	.6	.0	1.2
31.....	5.0	.....	.....	2.0	.....	2.8	.....	2.0	.....	.6	.0	.....

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901-2.												
1.....	1.2	1.7	5.5	2.3	1.0	3.3	2.5	3.0	3.0	1.2	0.7	0.4
2.....	1.2	1.7	3.5	2.4	1.0	3.0	3.0	3.0	3.0	3.0	.7	.4
3.....	1.2	1.4	3.1	2.8	1.0	2.5	3.0	3.5	3.3	3.0	.7	.4
4.....	1.2	1.4	3.1	3.5	1.3	3.0	2.5	3.3	3.0	4.9	.7	.3
5.....	1.2	4.5	3.5	4.2	1.3	3.3	2.5	3.0	3.0	3.8	.7	.3
6.....	1.2	3.1	3.5	4.6	2.3	3.0	3.5	3.3	3.0	3.5	.7	.3
7.....	1.2	2.7	3.2	4.2	2.6	3.5	5.2	3.8	2.5	3.0	.6	.3
8.....	1.1	2.4	4.8	4.6	2.6	3.3	4.1	3.5	2.5	2.5	.5	.3
9.....	1.1	2.0	4.8	4.2	5.2	3.0	3.5	3.3	2.5	2.0	.5	.3
10.....	1.0	1.9	3.3	3.5	4.1	3.6	3.3	3.3	2.5	1.9	.5	.2
11.....	.9	1.8	3.2	3.0	4.1	4.5	3.0	3.3	2.2	1.8	.5	.2
12.....	.8	1.7	2.8	3.0	3.7	3.5	3.0	3.3	2.1	1.7	.5	.2
13.....	.7	1.6	2.5	2.6	3.3	3.3	2.5	3.0	2.1	1.7	.2	.2
14.....	.6	1.4	2.3	2.3	3.0	3.3	2.5	3.3	2.1	1.5	.2	.2
15.....	.5	1.3	2.1	2.0	4.1	3.0	2.5	3.3	2.1	1.4	.2	.2
16.....	.5	1.3	2.0	2.0	3.9	3.0	3.0	3.3	2.1	1.4	.5	.2
17.....	.5	2.3	1.8	1.9	5.3	3.3	3.5	4.9	2.0	1.3	1.1	.2
18.....	.5	2.3	1.7	1.9	4.1	3.3	4.1	4.5	1.9	1.2	.7	.2
19.....	.5	2.3	1.6	1.8	3.3	3.3	4.1	4.5	1.8	1.1	.5	1.5
20.....	.4	3.1	1.5	1.7	3.3	3.3	3.5	3.8	1.6	1.1	.5	.7
21.....	.4	2.5	1.6	1.6	3.0	3.0	3.3	3.8	1.5	1.0	.5	.4
22.....	.4	6.9	4.8	1.6	3.0	3.0	3.0	3.5	1.4	1.0	.5	.4
23.....	.4	5.5	6.5	1.4	2.5	3.0	3.0	3.3	1.4	1.0	.5	.4
24.....	.4	4.3	4.2	1.3	3.0	2.5	3.0	3.3	1.5	.9	.5	.4
25.....	.4	3.5	4.8	1.2	3.3	2.5	2.5	3.3	1.4	.9	.5	1.1
26.....	.4	3.0	4.8	1.1	3.5	2.5	2.5	3.3	1.4	.9	.4	1.1
27.....	.5	2.7	3.3	1.0	3.3	3.0	2.5	3.2	1.4	.9	.4	2.8
28.....	.7	2.3	2.8	1.0	3.3	2.5	2.5	3.3	1.3	.8	.4	2.0
29.....	1.2	2.3	2.8	1.0	.....	2.5	2.5	3.0	1.3	.8	.4	2.5
30.....	1.5	2.2	2.5	1.0	.....	2.5	3.0	3.0	1.2	.8	.4	1.0
31.....	2.0	.....	2.3	1.0	.....	2.5	.....	2.5	.....	.7	.4	.....
1902-3.												
1.....	.9	1.0	4.7	4.0	2.2	1.7	2.7	2.9	2.7	2.7	.8	.5
2.....	.8	6.2	3.5	7.0	2.1	1.7	2.7	2.4	2.6	3.5	.8	.4
3.....	.7	4.7	3.5	9.0	2.0	1.7	2.2	2.6	2.5	3.0	.8	.3
4.....	.6	3.5	4.7	5.0	1.9	1.7	2.2	2.8	2.4	3.0	.8	.3
5.....	.5	3.0	4.0	3.5	1.3	1.7	2.0	2.8	1.9	2.7	.8	.3
6.....	.5	2.7	3.5	3.2	1.7	1.7	2.0	2.8	1.8	3.0	.7	1.7
7.....	.5	6.2	3.5	3.1	1.9	1.6	4.2	2.6	1.8	2.7	.7	3.0
8.....	.6	6.2	3.5	3.0	1.8	1.5	4.0	3.0	1.8	2.7	.7	2.2
9.....	.6	4.7	4.7	2.9	1.9	1.4	3.2	2.6	1.8	2.3	.7	1.8
10.....	.5	3.5	3.5	2.6	3.5	1.4	3.0	2.7	1.7	2.0	.7	1.7
11.....	.5	4.7	3.2	2.6	3.0	3.0	2.8	2.7	1.7	2.0	.7	2.2
12.....	.5	4.3	3.0	2.3	2.7	2.2	2.8	2.6	1.7	1.8	.7	5.0
13.....	.5	3.5	2.9	2.2	2.3	2.2	2.7	2.6	1.6	1.7	.7	3.0
14.....	.4	3.5	2.6	2.0	2.2	2.1	2.5	3.0	1.6	1.5	.7	1.7
15.....	.5	3.5	2.3	1.9	2.1	2.0	2.2	3.0	2.0	1.4	.7	1.7
16.....	.5	5.6	2.1	1.8	2.0	2.0	2.2	3.6	2.6	1.3	.6	1.6
17.....	.5	4.7	2.0	1.8	2.0	2.0	2.1	3.6	1.9	1.3	.6	1.6
18.....	.5	4.7	1.8	1.9	1.9	2.0	2.1	4.0	1.8	1.2	.6	1.6
19.....	.5	4.0	1.8	2.2	1.8	1.9	2.1	3.6	1.6	1.2	.6	1.6
20.....	.5	3.5	1.9	2.9	1.7	1.8	2.0	3.3	1.6	1.2	.6	1.6
21.....	.5	2.8	1.8	4.7	1.7	1.7	2.0	3.3	1.6	1.2	.6	1.6
22.....	1.0	2.7	2.3	4.0	1.7	1.6	2.7	3.3	1.5	1.2	.6	1.6
23.....	.9	2.4	2.3	5.0	1.7	1.7	2.7	3.0	1.5	1.0	.6	1.5
24.....	.8	3.5	4.4	9.0	1.7	1.7	2.5	3.0	1.5	1.0	.9	1.7
25.....	.8	2.7	3.5	5.0	1.7	1.7	2.5	2.9	1.5	.9	1.0	1.8
26.....	.8	2.4	4.0	4.0	1.7	1.8	3.2	2.9	1.5	.9	1.0	1.8
27.....	.7	2.7	3.5	3.6	1.7	1.9	2.7	2.9	1.9	.8	.9	1.7
28.....	1.1	2.7	2.2	3.0	1.6	3.0	2.2	3.1	3.0	.8	.6	1.8
29.....	1.0	3.5	2.2	2.7	.....	2.7	2.2	3.1	2.6	.8	.6	1.9
30.....	1.1	5.3	2.1	2.2	.....	2.7	2.9	3.0	2.5	.8	.6	1.7
31.....	2.9	.....	5.0	2.2	.....	2.7	.....	3.0	.....	.8	.5	.....

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	1.7	2.2										
2	1.7	2.2										
3	2.1	2.2										
4	4.0	2.2										
5	4.6	2.9										
6	4.6	7.2										
7	4.6	4.8										
8	4.2	4.2										
9	2.6	5.3										
10	2.9	4.2										
11	3.4	7.0										
12	2.9	4.6										
13	2.6	3.6										
14	2.5	3.9										
15	2.4	3.6										
16	2.4	3.4										
17	2.3	3.0										
18	2.3	2.8										
19	2.3	2.6										
20	2.2	2.6										
21	2.0	5.3										
22	2.0	3.6										
23	1.9	3.6										
24	1.9	2.9										
25	1.9	2.6										
26	1.9	2.6										
27	1.9	2.6										
28	2.2	2.6										
29	2.8	2.6										
30	2.7	2.6										
31	2.2											
1904-5.												
1			3.6	3.8	2.2	2.5	2.9	1.2	2.1	1.1	0.4	0.3
2			3.4	3.8	2.1	2.4	2.9	1.1	2.0	1.0	.4	.2
3			3.0	3.7	2.1	2.3	2.9	1.1	2.2	1.0	.4	.2
4			3.0	3.3	2.1	2.1	2.9	1.0	2.1	1.0	.4	.2
5			3.0	3.0	2.1	2.0	2.8	1.0	2.4	.9	.3	.2
6			2.8	3.0	1.9	1.8	2.8	1.0	2.3	.9	.3	.2
7			2.8	2.8	1.9	1.8	2.7	1.0	2.3	.9	.3	.2
8			2.7	2.8	1.9	1.7	2.6	2.2	2.2	.8	.3	.2
9			2.7	2.7	1.9	1.7	2.5	2.1	2.1	.8	.2	.2
10			2.7	2.6	1.9	1.6	2.4	2.4	1.9	.7	.2	.2
11			2.9	2.6	1.4	1.5	2.3	2.7	1.7	.7	.2	.2
12			3.6	2.5	1.4	1.5	2.0	2.5	1.6	.7	.2	.4
13			6.0	2.2	1.4	1.4	1.9	2.7	1.5	.7	.2	1.4
14			6.2	2.2	1.4	1.4	1.9	3.8	1.4	.7	.2	1.0
15			6.2	2.2	1.4	1.3	1.9	3.0	1.3	.7	.2	.4
16			4.3	2.2	1.4	1.3	1.9	2.6	1.3	.8	.2	.3
17			6.0	2.2	1.4	1.2	2.0	2.3	1.2	.7	.5	.8
18			4.5	2.2	1.4	1.3	1.9	2.1	1.1	.7	.4	.8
19			4.0	2.2	1.9	1.7	2.4	2.0	1.1	.6	.3	.5
20		6.0	3.8	2.4	2.0	2.0	2.2	2.3	1.0	.6	.3	.5
21		5.0	3.8	2.2	2.4	1.7	2.0	2.5	.9	.5	.3	.5
22		4.0	3.8	2.4	2.7	2.5	1.9	3.8	.9	.5	.3	.4
23		3.7	3.5	5.2	3.4	3.1	1.7	6.5	.9	.5	.2	4.4
24		3.7	3.8	4.5	3.3	3.9	1.7	4.0	1.0	.4	.2	.4
25		3.5	3.4	3.9	3.0	4.5	1.6	3.8	1.1	.4	.2	.5
26		3.0	3.0	3.9	2.7	4.4	1.6	3.2	1.1	.4	.2	2.8
27		3.0	3.0	3.7	2.6	3.5	1.5	2.7	1.6	.4	.2	1.8
28		3.0	3.0	3.7	2.7	3.2	1.4	2.6	1.5	.4	.4	2.0
29		3.0	7.4	3.5		2.8	1.3	2.4	1.2	.4	.3	2.2
30		3.0	5.1	3.0		2.5	1.3	2.1	1.1	.4	.3	2.6
31			4.4	2.5		2.3		1.9		.4	.3	

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	2.2	1.6	2.4	2.4	3.4	4.0	3.0	2.4	1.8	2.0	0.6	0.4
2.....	3.4	1.5	4.0	2.4	3.0	3.5	2.7	2.5	1.7	1.8	.6	.4
3.....	4.6	1.6	3.8	2.3	2.8	2.7	2.4	2.0	2.0	1.7	.6	.4
4.....	4.8	1.5	3.4	2.4	2.6	2.5	2.2	1.8	2.1	1.6	.5	.4
5.....	4.6	1.4	2.5	3.0	2.5	2.6	2.3	1.7	2.1	1.5	.5	.4
6.....	4.4	1.4	3.3	3.3	2.4	2.9	2.5	1.6	2.4	1.4	.5	.4
7.....	5.2	1.2	3.6	3.6	2.1	3.0	2.8	1.5	2.6	1.3	.5	.4
8.....	5.6	1.2	3.1	3.3	2.0	3.0	2.6	1.5	2.3	1.2	.5	.5
9.....	4.1	1.2	2.7	3.3	1.9	3.1	2.8	1.4	2.5	1.1	.5	.5
10.....	3.4	1.2	2.5	3.1	1.8	3.0	2.5	1.4	2.3	1.0	.5	.5
11.....	2.9	1.1	2.3	2.9	1.8	2.6	2.4	1.3	2.6	1.0	.5	.4
12.....	2.5	1.1	2.1	2.7	1.7	2.4	2.1	1.3	2.3	1.0	.5	.8
13.....	2.3	1.1	2.0	2.8	1.6	2.1	2.1	1.0	2.0	.9	.6	2.4
14.....	2.1	1.0	1.9	2.5	1.6	2.0	2.1	1.2	2.0	.9	.5	4.5
15.....	3.6	1.0	1.8	2.4	1.5	1.9	2.1	1.9	2.3	.8	.5	2.9
16.....	3.1	1.0	1.8	2.6	2.0	1.7	2.1	1.9	3.7	.8	.5	2.6
17.....	3.5	1.1	4.2	2.6	6.9	1.5	2.1	2.1	3.1	.8	.5	1.7
18.....	3.0	1.2	3.6	2.6	5.8	1.6	2.1	2.1	2.7	.7	.4	1.4
19.....	2.6	3.9	3.5	2.4	4.7	1.6	2.0	2.2	2.8	.7	.4	1.2
20.....	2.3	2.7	3.1	2.2	5.2	1.5	2.0	2.3	2.1	.7	.4	1.0
21.....	2.1	2.5	2.8	2.0	4.5	1.4	2.1	2.5	2.0	.7	.4	.8
22.....	2.0	2.1	2.5	2.2	4.6	1.4	2.1	2.4	1.9	.6	.4	.8
23.....	1.8	1.9	2.3	5.1	3.8	1.4	2.0	2.3	1.7	.6	.4	.9
24.....	2.1	1.8	2.2	5.0	3.7	1.7	2.0	2.1	1.6	.6	.4	1.6
25.....	3.1	1.6	2.3	4.2	3.5	1.5	3.0	2.1	1.5	.6	.4	1.5
26.....	2.6	4.0	4.1	3.8	4.2	2.2	2.8	2.2	1.4	.6	.4	1.3
27.....	2.4	3.1	3.5	3.5	4.0	2.1	2.5	2.0	1.4	.6	.4	1.1
28.....	2.2	2.6	3.1	3.2	3.5	2.1	2.6	1.9	1.7	.6	.4	.9
29.....	2.5	2.5	2.8	3.2	.....	2.1	2.4	1.9	2.2	.6	.4	.9
30.....	1.9	2.4	2.9	3.4	.....	2.9	2.3	2.0	2.4	.6	.4	.8
31.....	1.6	.....	2.6	3.6	.....	3.7	.....	1.9	.....	.6	.4	.....
1906-7.												
1.....	1.1	2.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.45
2.....	1.2	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.38
3.....	2.9	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.35
4.....	2.4	2.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.31
5.....	2.0	2.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.27
6.....	1.7	2.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.25
7.....	1.5	8.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.25
8.....	1.9	5.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.22
9.....	1.8	4.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.19
10.....	1.7	4.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17
11.....	1.7	4.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.18
12.....	2.1	4.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.26
13.....	1.6	10.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.17
14.....	2.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.15
15.....	3.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.30
16.....	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.55
17.....	5.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.47
18.....	4.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.12
19.....	3.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.90
20.....	3.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.12	.86
21.....	2.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.11	.66
22.....	2.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.11	.57
23.....	2.2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.10	.49
24.....	2.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.30	.45
25.....	1.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.70	.44
26.....	4.0	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.38	.42
27.....	3.8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.79	.60
28.....	2.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.58	.90
29.....	2.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.53	.63
30.....	2.4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.51	.52
31.....	2.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.45	.....

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1907-8.												
1.....	0.97	0.64	2.70	2.55	1.25	1.68	2.40	2.27	2.43	1.60	0.41	0.56
2.....	1.23	1.30	2.35	2.70	1.20	1.57	2.38	2.16	2.50	1.50	.40	.50
3.....	.97	.87	2.10	2.60	1.50	1.51	2.53	2.18	2.33	1.40	.39	.46
4.....	.88	.73	1.92	2.65	1.30	1.45	2.48	2.06	2.34	1.38	.38	.42
5.....	.77	.67	2.08	3.40	2.75	1.41	2.26	1.90	2.23	1.30	.37	.39
6.....	.78	.60	1.88	3.10	3.15	1.35	2.20	1.90	2.10	1.20	.36	.37
7.....	.73	.54	3.45	2.65	2.70	1.24	2.00	2.00	2.00	1.12	.35	.44
8.....	.59	.50	2.85	3.00	2.35	1.19	1.90	2.10	2.00	1.05	.34	.78
9.....	.53	.47	3.40	2.90	2.10	1.17	2.00	1.98	2.00	1.00	.32	.43
10.....	.46	.49	2.90	2.65	1.90	1.19	2.00	1.83	1.95	.95	.31	.40
11.....	.44	.39	4.36	3.50	1.90	1.45	2.10	1.83	1.83	.90	.30	.38
12.....	.39	.38	4.10	3.05	1.80	2.54	2.25	1.80	1.75	.86	.30	.36
13.....	.40	.40	5.15	2.74	1.70	4.20	2.40	1.60	1.60	.81	.48	.36
14.....	.43	.80	4.10	2.60	1.80	6.60	2.36	1.64	1.55	.76	.38	.34
15.....	.42	.66	3.30	2.30	1.78	8.80	2.34	2.48	1.47	.75	.33	.33
16.....	.38	.97	2.85	2.20	2.00	6.35	2.30	3.20	1.40	.84	.33	.31
17.....	.37	.77	2.50	2.80	2.32	4.65	3.95	3.10	1.45	.73	.33	.31
18.....	.37	.76	2.18	2.50	2.14	3.70	4.30	3.50	2.02	.68	.32	.28
19.....	.35	1.87	2.04	3.05	2.00	3.15	3.85	3.40	2.50	.64	.32	.27
20.....	.33	3.22	2.55	3.15	1.84	2.90	3.50	3.30	2.53	.60	.31	.26
21.....	.32	3.95	5.36	2.90	1.70	2.64	3.05	3.10	2.40	.58	.30	.26
22.....	.32	5.12	7.10	2.60	1.59	2.40	2.67	3.00	2.20	.58	.29	.27
23.....	.31	4.67	6.95	2.25	1.52	2.30	2.60	2.74	1.98	.54	.29	.27
24.....	.30	8.00	5.25	2.10	1.48	2.40	4.35	2.60	1.82	.52	.33	.26
25.....	.28	5.70	5.40	1.90	1.54	2.50	3.40	2.45	1.75	.50	.41	.25
26.....	.27	5.00	5.40	1.75	1.65	2.50	2.90	2.30	1.74	.50	.38	.24
27.....	.25	3.90	4.10	1.60	1.98	2.30	2.70	2.12	2.40	.49	.35	.25
28.....	.28	4.00	3.60	1.50	1.92	2.20	2.42	1.97	2.00	.49	1.50	.25
29.....	.74	3.70	3.10	1.85	1.80	2.18	2.30	2.10	1.82	.47	1.75	.25
30.....	.78	3.10	2.80	1.55	.....	2.72	2.28	2.16	1.70	.46	.90	.23
31.....	.96	.....	2.50	1.37	.....	2.46	.....	2.12	.....	.45	.67	.....
1908-9.												
1.....	.40	2.90	1.90	2.30	1.58	3.16	3.50	2.47	3.50	.80	.68	.40
2.....	.44	2.39	1.70	2.56	1.66	3.25	3.00	2.60	3.10	.80	.66	.39
3.....	.32	2.04	1.60	3.22	1.88	3.05	2.70	3.12	2.80	.76	.65	.38
4.....	.28	1.76	1.45	3.70	1.80	2.92	2.40	3.28	2.50	.75	.62	.38
5.....	.27	1.56	1.32	3.02	1.78	2.60	2.40	2.69	2.33	.80	.60	.36
6.....	.25	1.40	1.22	2.62	1.76	2.35	2.40	2.34	2.12	2.60	.60	.35
7.....	.24	1.28	1.18	2.38	1.68	2.12	2.30	2.18	2.00	1.95	.56	.34
8.....	.23	1.17	1.35	2.08	1.60	2.90	2.25	2.05	1.90	1.50	.52	.33
9.....	.20	1.07	1.25	1.90	1.58	2.70	2.25	2.30	1.86	1.30	.50	.33
10.....	.20	1.00	1.18	1.80	1.56	2.50	2.27	2.30	1.81	1.45	.50	.60
11.....	.28	.92	1.10	1.60	1.50	2.20	2.10	3.25	1.81	2.15	.48	.56
12.....	.33	.86	3.05	1.35	1.50	2.10	2.04	2.90	1.70	1.80	.48	.45
13.....	1.66	.80	3.20	1.45	1.65	2.03	2.02	2.65	1.56	1.58	.48	.40
14.....	3.57	.76	2.50	1.40	1.75	1.98	2.00	2.45	1.50	1.40	.50	.38
15.....	3.49	.71	2.18	3.00	2.75	1.94	2.00	2.30	1.46	1.28	.50	.35
16.....	3.25	.70	1.95	3.90	4.65	2.18	1.94	2.65	1.48	1.15	.50	.33
17.....	2.52	.72	1.70	4.90	4.85	2.34	1.88	2.50	1.39	1.07	.47	.38
18.....	2.00	3.05	1.55	5.50	4.80	2.18	1.80	2.40	1.30	1.18	.47	.34
19.....	3.35	1.90	1.42	6.50	3.85	2.07	1.72	2.30	1.20	1.02	.43	.30
20.....	3.45	2.50	1.33	6.20	3.27	1.98	1.76	2.20	1.20	.95	.42	1.45
21.....	2.60	2.85	1.32	6.00	2.83	1.90	1.63	2.05	1.15	.90	.42	1.78
22.....	2.20	3.95	1.35	4.40	2.48	1.77	1.66	1.94	1.10	.84	.42	.80
23.....	1.90	3.75	2.55	3.50	2.36	1.72	1.72	1.84	1.05	.80	.44	.64
24.....	1.70	3.00	2.07	3.00	3.02	1.69	1.65	1.88	1.00	.78	.42	.48
25.....	1.59	2.54	2.80	2.60	3.08	1.81	2.00	1.90	.95	.82	.40	.48
26.....	1.48	2.16	3.12	2.40	2.83	1.89	2.60	2.31	1.30	.82	.64	.46
27.....	1.37	1.95	4.43	2.18	3.00	2.00	4.95	2.85	1.06	.89	.53	.42
28.....	1.30	1.75	5.18	1.96	3.10	2.20	3.90	2.63	.95	.95	.46	.40
29.....	1.40	1.75	3.90	1.84	.....	2.50	3.00	3.40	.90	.82	.42	1.03
30.....	2.25	2.20	3.15	1.70	.....	2.50	2.65	3.93	.85	.76	.42	.86
31.....	3.85	.....	2.60	1.63	.....	2.90	.....	3.70	.....	.72	.40	.....

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	0.74	4.15	4.10	1.50	3.00	8.20	2.10	1.80	1.00	0.75	0.66	0.35
2.....	.60	7.70	3.45	1.38	2.60	8.00	3.16	1.70	.85	.70	.60	.30
3.....	.50	6.85	2.95	1.35	2.35	6.40	2.95	3.12	.92	.68	.60	.30
4.....	.46	4.60	2.60	1.32	2.10	5.20	2.70	3.80	.90	.68	.60	.28
5.....	.42	3.95	2.40	1.22	1.95	4.86	2.60	3.40	.90	.65	.60	.25
6.....	2.20	3.60	2.05	1.22	1.80	3.92	2.68	2.90	.82	.63	.60	.33
7.....	1.40	3.20	1.95	1.30	1.70	3.45	3.10	2.70	.80	.60	.60	.30
8.....	1.15	3.65	1.50	1.28	1.60	3.30	4.10	2.50	.80	.60	.57	.27
9.....	1.00	3.50	2.25	1.24	1.58	3.30	3.65	2.38	.75	.56	.54	.20
10.....	.88	3.80	2.00	1.18	1.53	3.10	3.20	2.80	.74	.63	.50	.22
11.....	.78	3.40	2.50	1.14	1.63	3.30	3.10	2.70	1.92	.63	.50	.26
12.....	.70	2.95	5.10	1.10	1.72	3.45	2.95	2.50	1.48	.63	.48	.25
13.....	.66	2.60	4.35	1.05	3.88	3.80	2.90	2.38	1.35	.62	.48	.20
14.....	.63	2.30	3.50	1.05	2.92	3.80	2.60	2.15	1.10	.60	.48	.15
15.....	.58	2.00	3.00	1.00	2.44	3.60	2.40	2.00	1.00	.58	.48	.15
16.....	.53	1.82	2.70	.98	2.13	3.60	2.30	1.80	1.00	.56	.48	.31
17.....	.50	2.16	2.40	1.00	2.20	3.55	2.30	1.75	1.00	.55	.48	.50
18.....	.45	4.80	2.20	2.05	2.54	3.55	2.55	1.65	.94	.60	.40	.38
19.....	.80	6.61	2.00	2.30	2.34	3.80	2.70	1.55	1.10	.70	.38	.25
20.....	1.16	5.80	1.88	1.85	2.26	3.35	2.15	1.45	1.25	.68	.38	.22
21.....	1.55	4.15	1.70	2.35	2.16	3.05	2.85	1.40	1.28	.68	.35	.35
22.....	1.30	8.20	1.60	4.60	1.90	3.30	2.60	1.35	1.26	.66	.33	.30
23.....	1.10	7.20	1.50	5.75	2.40	3.35	2.80	1.30	1.10	.63	.32	.30
24.....	1.05	6.20	1.45	5.50	3.93	2.95	2.75	1.35	1.02	.60	.32	.28
25.....	.95	4.65	1.40	5.00	4.38	2.70	2.68	1.30	.94	.62	.30	.26
26.....	.85	3.80	1.30	3.40	3.85	2.46	2.55	1.35	.91	.65	.30	.24
27.....	.80	3.18	1.28	3.00	5.17	2.30	2.25	1.30	.86	.62	.30	.18
28.....	.80	5.05	1.20	3.90	5.60	2.22	2.00	1.20	.84	.70	.33	.12
29.....	1.90	4.90	1.18	3.20	.....	2.10	1.85	1.35	.81	.70	.60	.15
30.....	1.45	5.15	1.20	3.10	.....	1.95	2.00	1.10	.82	.70	.58	.15
31.....	3.25	.....	1.75	3.50	.....	2.04	.....	1.50	.....	.68	.45	.....

NOTE.—Gage-height record, beginning Aug. 20, 1907, obtained from the Survey gage. A temporary brush and log dam below the gage affects the discharge relation during low-water periods.

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1909-10.

[Friez recording gage.]

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1909.								
1.....	3.10	2.78	11.....	2.93	.....	21.....	2.84	3.54
2.....	3.08	2.78	12.....	2.92	2.80	22.....	2.83	3.10
3.....	3.06	2.77	13.....	2.91	2.78	23.....	2.83	2.97
4.....	3.04	2.76	14.....	2.91	2.76	24.....	2.83	2.91
5.....	3.03	2.75	15.....	3.02	.....	25.....	2.82	2.90
6.....	3.01	2.75	16.....	2.91	.....	26.....	2.92	.....
7.....	2.98	2.74	17.....	2.89	.....	27.....	2.87	.....
8.....	2.97	2.74	18.....	2.87	2.74	28.....	2.82	.....
9.....	2.96	2.73	19.....	2.86	2.74	29.....	2.81	3.40
10.....	2.94	.....	20.....	2.85	3.31	30.....	2.80	.....
						31.....	2.79	.....

Daily gage height, in feet, of Bull Run River near Bull Run, Oreg., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1		5.66		3.77	4.84		4.18	3.94	3.25	3.11	2.70	2.62
2	3.05			3.75	4.52		5.05	3.95	3.22	3.04	2.72	2.61
3	2.99	8.70		3.69	4.28		4.80	4.90	3.22	3.03	2.73	2.60
4	2.96	6.80	4.55	3.69	4.11		4.65	5.30	3.20	3.01	2.73	2.60
5	2.95	5.85		3.69	4.00	6.45	4.61	5.15	3.17	3.00	2.74	2.61
6	3.85	5.44		3.69	3.89	5.67	4.62	4.78	3.14	3.00	2.75	2.62
7	3.72	5.10	4.05	3.57	3.80	5.25	4.85	4.66	3.12	3.00	2.75	2.64
8	3.47	5.40	4.00	3.45	3.70	5.09	5.75	4.52	3.10	2.99	2.74	2.66
9	3.36	5.40	4.25	3.45	3.72	5.06	5.37	4.42	3.08	2.98	2.73	2.68
10		5.60	4.00	3.44	3.70	5.00	5.06	4.81	3.08	2.97	2.72	2.70
11	3.20	5.20	4.60	3.43	3.76	5.12	4.95	4.75	4.05	2.96	2.71	2.70
12	3.15	4.90	6.78	3.40	3.88	5.32	4.82	4.47	3.70	2.94	2.70	2.70
13	3.12	4.62	6.15	3.33	4.15	5.64	5.76	4.30	3.45	2.92	2.68	2.70
14	3.09	4.35	5.35	3.30	3.63	5.60	4.51	4.20	3.36	2.90	2.68	2.70
15	3.06	4.15		3.28	3.32	5.58	4.38	4.04	3.32	2.90	2.68	2.70
16	3.01	4.00		3.28	3.11	5.45	4.32	3.93	3.30	2.88	2.67	2.70
17	2.98	4.54		3.28		5.45	4.30	3.85	3.28	2.87	2.67	2.70
18	2.96	6.66	4.18	4.26			4.50	3.78	3.20	2.86	2.67	2.65
19	3.26	8.87	4.05	4.28	4.25	5.50	4.63	3.72	3.38	2.85	2.67	2.64
20	3.51	7.75	3.95		4.20	5.07	4.85	3.65	3.45	2.84	2.66	2.64
21	3.70	6.08	3.80		4.15	4.95	4.72	3.60	3.45	2.82	2.66	2.67
22	3.60		3.70		3.93	5.20	4.61	3.56	3.40	2.81	2.66	2.66
23	3.44		3.60		4.37	5.15	4.70	3.54	3.33	2.80	2.65	2.65
24	3.40	8.18	3.60		4.83	4.80	4.71	3.52	3.28	2.79	2.65	2.65
25	3.38	6.45	3.56		5.87	4.57	4.62	3.50	3.23	2.77	2.65	2.65
26	3.30	5.58	3.50	4.95	5.80	4.42	4.52	3.52	3.22	2.75	2.64	2.65
27	3.25	5.08	3.45	5.13		4.27	4.25	3.54	3.18	2.73	2.64	2.65
28		6.65	3.40	5.58		4.23	4.08	3.40	3.16	2.72	2.67	2.65
29		7.30	3.38	5.09		4.11	3.96	3.50	3.13	2.71	2.68	2.64
30	3.80			4.95		4.03	4.02	3.30	3.13	2.70	2.65	2.68
31	5.23			5.35		4.08		3.28		2.70	2.65	

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895.												
1					330	870	990	870	1,050	280	170	160
2					390	870	990	1,050	1,050	280	170	160
3					430	870	1,340	1,340	870	280	170	170
4					430	670	1,340	2,890	760	250	170	170
5				870	390	670	990	2,230	580	360	170	250
6				810	360	620	930	3,320	580	360	170	170
7				620	330	620	930	2,000	580	250	170	170
8				620	360	620	870	2,230	580	250	170	170
9				3,770	360	620	930	1,690	460	250	160	170
10				2,350	330	620	1,050	1,420	460	250	160	170
11				3,620	300	580	870	1,190	460	250	160	190
12				7,700	330	540	870	1,120	390	230	160	210
13				4,780	330	460	930	1,120	360	230	160	210
14				3,320	300	430	810	930	360	210	160	330
15				1,890	300	430	810	930	430	210	160	250
16				1,260	430	390	2,230	930	580	210	140	250
17				1,050	620	360	1,690	930	500	210	140	210
18				870	1,890	360	1,420	810	430	210	140	190
19				760	1,600	360	1,340	670	390	210	140	170
20				670	1,260	360	1,120	670	390	210	140	330
21				620	1,260	430	1,050	580	360	210	140	280
22				580	1,260	360	1,050	760	360	210	140	280
23				500	1,260	500	1,190	620	330	190	140	250
24				460	1,790	670	1,420	580	330	190	140	250
25				430	1,260	1,190	1,340	580	330	190	140	360
26				430	930	1,420	1,190	2,350	330	170	140	280
27				390	930	1,790	1,120	2,350	300	170	140	280
28				330	930	2,610	990	1,690	280	170	140	280
29				330		1,510	930	1,510	280	170	140	230
30				330		1,120	810	1,510	280	170	160	210
31				360		1,050		1,340		170	160	

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.....	190	130	2,230	3,320	2,000	1,510	710	1,260	1,260	500	170	210
2.....	170	580	1,260	1,690	1,340	1,120	710	1,510	1,120	500	190	190
3.....	170	210	990	1,340	1,120	930	670	2,000	1,120	460	190	170
4.....	170	190	870	1,690	580	810	620	2,480	1,050	430	210	170
5.....	170	170	710	1,690	3,320	810	620	2,480	1,510	430	210	160
6.....	170	170	2,110	3,770	2,350	710	670	2,230	1,690	390	210	160
7.....	170	170	1,890	3,320	1,600	710	810	2,000	1,340	360	210	160
8.....	170	170	1,260	3,320	1,340	930	1,120	1,510	3,320	360	190	160
9.....	170	170	1,050	3,620	1,260	1,510	930	1,510	2,000	330	190	140
10.....	170	300	2,610	2,890	1,050	1,340	930	1,260	1,790	330	170	140
11.....	170	230	1,690	2,000	930	1,190	990	2,110	1,510	330	170	140
12.....	170	250	8,140	1,340	930	1,120	3,320	2,000	1,260	300	170	140
13.....	160	330	2,350	1,120	870	1,050	9,030	1,510	1,260	300	170	140
14.....	160	2,750	2,000	990	1,510	990	3,320	1,340	1,050	300	170	140
15.....	140	2,350	1,600	870	1,510	870	2,000	1,260	1,050	250	160	300
16.....	140	1,120	1,260	760	1,790	810	1,510	1,340	1,050	250	160	300
17.....	140	580	990	1,340	2,000	760	1,190	1,260	1,120	230	160	250
18.....	140	580	870	1,690	1,510	710	1,050	1,260	990	230	140	210
19.....	140	500	1,690	1,690	1,260	810	870	1,260	930	230	140	190
20.....	130	430	3,030	3,770	1,120	1,120	870	1,120	870	210	140	170
21.....	130	540	1,890	3,320	1,190	2,000	810	1,120	810	210	140	170
22.....	130	430	1,260	2,000	1,190	1,340	930	1,260	810	210	140	170
23.....	130	430	1,790	1,690	1,120	1,340	990	1,790	760	210	140	170
24.....	130	330	1,260	1,340	3,170	4,960	990	1,510	710	190	140	170
25.....	130	280	1,120	1,190	3,030	3,030	990	1,340	710	190	140	160
26.....	130	280	1,120	1,120	3,930	2,000	990	1,340	710	190	140	140
27.....	130	790	7,920	1,510	3,030	1,510	1,050	1,260	710	190	140	140
28.....	130	1,120	2,750	1,420	3,320	1,190	1,260	1,420	710	170	140	140
29.....	130	870	1,600	1,420	2,230	1,120	1,050	1,510	620	170	140	140
30.....	130	1,260	1,120	1,120	.....	930	990	1,690	580	170	140	140
31.....	130	.....	1,790	930	.....	810	.....	1,510	.....	170	.....	.....
1896-97.												
1.....	170	1,050	2,000	1,260	1,260	990	930	990	390	540	140	190
2.....	170	2,350	4,960	930	1,260	990	930	990	390	1,120	140	170
3.....	170	1,510	4,960	810	1,510	990	930	870	390	1,120	140	300
4.....	160	1,600	4,960	810	3,320	990	990	870	390	870	160	210
5.....	160	1,510	3,320	1,260	1,510	930	1,050	870	390	870	160	990
6.....	160	1,050	3,030	1,260	2,750	870	1,510	870	390	990	160	580
7.....	140	870	3,620	1,260	2,230	870	1,790	870	390	990	160	540
8.....	140	11,460	4,960	1,260	1,510	810	1,510	870	390	870	160	460
9.....	130	5,860	3,470	990	1,260	760	1,510	870	390	670	140	390
10.....	130	3,320	2,750	930	1,260	760	2,230	1,050	390	670	140	330
11.....	190	2,350	3,030	870	4,960	670	1,690	1,050	390	540	140	300
12.....	160	1,690	3,930	870	4,100	670	1,690	1,050	670	540	140	280
13.....	140	1,890	4,610	760	2,230	670	1,690	1,050	460	460	140	280
14.....	140	6,850	3,470	710	1,890	760	1,690	1,050	460	460	140	250
15.....	130	6,850	2,610	670	4,960	760	1,690	870	460	460	140	230
16.....	130	5,860	1,790	620	4,100	930	2,350	870	540	460	130	210
17.....	130	3,320	1,340	620	1,890	930	2,480	870	670	460	130	190
18.....	130	2,350	1,340	580	1,510	990	2,480	870	990	460	130	190
19.....	130	2,000	2,610	990	1,510	930	2,750	870	670	390	130	190
20.....	130	1,340	2,610	4,960	1,260	930	2,750	870	540	390	130	170
21.....	130	1,190	1,510	3,170	1,050	760	2,480	870	540	390	130	170
22.....	130	2,350	1,260	1,600	990	760	1,690	670	430	300	130	170
23.....	130	1,890	1,050	1,600	930	990	1,340	670	670	300	130	170
24.....	130	1,510	930	1,600	930	4,100	1,120	500	570	250	130	170
25.....	130	1,120	810	1,190	810	4,610	1,120	500	540	250	130	170
26.....	130	990	760	930	810	3,770	1,340	390	540	190	130	170
27.....	110	870	760	810	810	2,230	1,120	390	540	190	130	160
28.....	110	760	810	810	990	2,230	1,050	390	540	170	130	190
29.....	390	670	760	760	.....	1,510	990	390	540	160	190	160
30.....	300	580	1,260	930	.....	1,260	870	390	540	140	190	170
31.....	2,350	.....	1,050	1,260	.....	1,050	.....	390	.....	140	.....	.....

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1.....	170	330	2,000	1,050	620	870	430	710	870	230	140	140
2.....	170	330	1,190	870	620	870	430	710	710	230	140	130
3.....	160	300	990	870	620	1,050	430	870	710	210	140	130
4.....	160	280	870	760	710	1,050	430	870	580	210	140	130
5.....	160	390	4,960	760	1,690	870	430	870	580	210	140	130
6.....	160	710	3,930	1,050	2,610	810	580	710	580	210	140	110
7.....	160	710	3,320	870	3,320	810	710	710	580	210	140	110
8.....	140	710	2,750	760	2,000	810	710	620	500	196	140	110
9.....	130	1,340	2,000	760	1,510	710	710	580	460	190	140	110
10.....	130	6,850	2,350	760	1,510	580	710	710	430	170	140	110
11.....	130	3,320	3,930	760	1,690	580	710	710	430	170	130	100
12.....	160	4,270	2,610	580	3,320	540	870	710	430	170	130	100
13.....	170	4,960	2,750	760	2,610	540	1,050	710	430	170	130	100
14.....	170	2,000	3,320	870	7,260	500	1,120	710	390	170	130	110
15.....	160	1,340	2,000	1,790	4,270	460	1,120	870	390	170	130	100
16.....	140	1,190	1,260	1,510	4,270	430	1,050	810	500	190	130	100
17.....	140	3,320	990	1,510	2,000	430	870	710	500	230	130	100
18.....	130	4,960	930	1,120	1,510	390	870	870	390	210	130	100
19.....	130	4,960	930	2,000	1,190	460	710	870	390	190	280	100
20.....	140	2,350	760	1,600	1,190	460	710	870	390	170	140	100
21.....	540	1,510	710	1,260	1,190	460	710	870	390	170	130	460
22.....	710	1,260	670	1,890	1,050	430	2,230	1,120	360	170	130	460
23.....	460	1,050	670	1,600	870	390	1,690	870	360	230	130	360
24.....	710	930	930	760	810	430	1,420	710	330	170	130	280
25.....	620	710	1,260	710	810	390	1,690	710	330	170	130	250
26.....	540	580	2,000	620	810	360	2,230	710	300	170	130	230
27.....	460	710	3,320	580	760	430	1,420	580	300	160	130	190
28.....	390	930	4,960	500	1,190	430	1,260	620	250	160	130	190
29.....	360	990	2,750	500	-----	430	1,120	710	250	160	130	1,690
30.....	360	3,320	2,350	620	-----	430	870	760	230	140	130	2,890
31.....	330	-----	1,420	620	-----	430	-----	760	-----	140	-----	-----
1898-99.												
1.....	1,510	460	3,620	930	1,050	3,320	580	810	2,230	710	220	430
2.....	1,510	1,120	2,000	710	990	2,110	1,340	810	2,000	710	220	430
3.....	930	1,510	1,340	710	670	2,110	2,000	810	2,000	710	210	430
4.....	870	3,620	1,120	580	620	2,000	1,600	810	2,000	620	210	500
5.....	580	1,690	930	580	580	1,510	990	810	2,000	620	190	500
6.....	460	1,340	930	580	580	1,260	990	990	1,600	580	190	500
7.....	390	1,120	710	580	540	1,260	990	990	1,600	540	190	430
8.....	360	930	580	580	4,440	1,260	1,340	1,340	1,600	540	190	430
9.....	580	710	580	580	7,480	1,260	1,340	2,000	1,600	540	1,760	390
10.....	460	710	460	1,120	3,320	810	2,000	1,340	1,600	540	540	360
11.....	580	580	460	1,120	2,110	810	3,470	2,000	2,000	500	460	330
12.....	1,260	580	460	1,120	2,110	810	3,930	990	2,350	500	430	330
13.....	710	460	390	930	2,110	810	2,000	990	2,000	500	360	360
14.....	2,230	460	390	930	2,110	670	1,340	810	1,690	460	330	300
15.....	1,510	460	390	1,420	3,320	670	990	810	1,690	460	1,050	250
16.....	1,120	580	360	3,620	2,110	580	1,340	810	1,690	430	540	250
17.....	710	2,890	360	3,320	3,320	500	1,340	990	1,600	430	500	230
18.....	670	4,100	460	2,480	2,110	460	990	990	1,600	390	430	210
19.....	580	2,000	1,420	2,000	2,480	460	990	1,600	1,600	360	430	210
20.....	540	1,340	1,340	7,920	2,110	460	990	1,600	1,600	360	430	210
21.....	460	1,120	1,120	11,400	1,510	460	990	1,340	1,340	330	580	190
22.....	430	1,340	930	3,320	1,190	460	810	810	1,340	360	3,320	190
23.....	390	2,890	930	2,000	1,190	460	810	1,600	1,260	330	1,050	170
24.....	360	2,000	930	1,600	1,510	460	810	1,600	990	300	760	170
25.....	360	1,340	930	2,000	1,510	430	990	1,600	990	300	710	170
26.....	360	1,120	1,340	1,600	1,190	430	1,340	1,600	1,190	280	1,050	170
27.....	360	1,690	3,320	1,420	2,000	430	1,600	2,000	930	250	1,050	160
28.....	360	2,230	3,320	1,260	3,470	430	990	2,000	760	250	760	160
29.....	360	2,230	2,000	1,190	-----	580	990	1,690	760	230	760	160
30.....	360	2,890	1,420	1,050	-----	580	1,600	1,600	760	230	580	500
31.....	460	-----	1,120	1,050	-----	580	-----	1,690	-----	230	500	-----

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899-1900.												
1.....	1,050	430	6,250	580	460	1,340	1,190	360	540	540	190	210
2.....	760	430	3,170	580	430	1,050	1,120	360	500	360	190	210
3.....	540	430	1,420	990	540	1,340	990	360	460	360	170	210
4.....	460	500	1,120	810	540	1,050	930	330	430	360	170	210
5.....	360	430	1,120	710	540	1,050	810	460	430	810	160	190
6.....	360	330	1,120	760	930	1,340	710	430	460	620	160	190
7.....	330	500	990	760	760	2,480	990	360	390	540	160	190
8.....	300	430	990	990	1,420	3,770	870	670	360	540	160	360
9.....	250	430	1,120	760	1,420	2,230	760	330	360	430	190	280
10.....	250	500	1,420	1,120	1,190	2,230	760	330	330	390	160	230
11.....	230	620	3,170	2,350	1,420	1,790	760	330	330	390	160	210
12.....	230	500	2,350	11,400	1,120	1,510	760	670	330	390	160	190
13.....	210	620	1,690	4,960	990	1,340	930	1,420	280	360	160	190
14.....	190	500	1,420	3,320	990	1,120	930	1,120	280	360	140	280
15.....	190	620	1,120	2,000	760	990	930	1,050	250	330	140	280
16.....	2,890	1,120	990	2,890	670	870	870	1,120	460	300	140	250
17.....	1,050	930	760	3,320	620	760	710	870	360	280	140	250
18.....	2,890	2,610	710	2,000	930	710	670	670	390	250	140	230
19.....	5,500	3,170	710	1,790	930	710	670	620	620	230	140	210
20.....	2,000	2,610	710	1,600	1,510	670	580	580	540	230	140	1,510
21.....	1,690	1,120	3,030	1,190	6,850	580	540	540	540	230	140	810
22.....	1,420	930	2,000	1,050	3,320	580	580	580	540	210	140	540
23.....	1,050	930	2,000	990	2,480	540	540	540	460	210	140	870
24.....	1,260	760	1,690	810	1,790	500	460	540	390	210	330	710
25.....	1,050	670	1,420	710	1,690	580	460	500	390	210	1,420	580
26.....	760	3,170	1,120	620	1,340	990	460	1,790	390	210	760	500
27.....	460	4,100	990	580	990	870	430	1,120	360	210	280	430
28.....	620	3,170	810	540	2,890	760	430	870	360	210	250	390
29.....	580	4,100	710	500	.....	2,230	390	760	360	210	230	330
30.....	500	3,170	710	500	.....	1,510	360	670	540	190	210	300
31.....	430	.....	710	500	.....	1,340	.....	620	.....	190	210	.....
1900-1901.												
1.....	280	3,320	2,480	670	580	3,320	1,120	1,120	580	500	170	90
2.....	280	6,850	2,230	670	540	3,320	1,890	1,120	500	500	160	130
3.....	280	2,750	1,420	620	500	1,890	1,260	1,120	500	500	160	130
4.....	280	1,690	1,190	580	430	1,690	1,190	930	500	500	160	90
5.....	360	1,190	1,420	540	390	1,260	1,190	870	620	460	140	90
6.....	670	990	1,190	540	360	1,190	1,120	870	620	430	140	90
7.....	430	760	990	500	360	1,120	990	870	500	430	140	90
8.....	390	990	810	540	330	1,190	870	870	500	430	140	90
9.....	390	760	710	500	330	1,190	870	2,000	500	430	140	90
10.....	430	670	670	430	330	1,190	870	1,420	500	430	130	90
11.....	300	620	540	1,420	300	1,120	870	1,420	500	430	130	90
12.....	280	540	500	4,960	300	1,050	1,120	1,120	930	390	130	90
13.....	280	500	670	11,400	390	990	1,120	1,120	930	360	130	170
14.....	280	460	810	4,960	2,610	930	1,120	1,120	930	360	130	130
15.....	250	460	810	2,890	6,850	930	1,120	1,120	620	360	110	90
16.....	230	460	1,190	2,000	15,200	930	870	1,600	620	360	110	90
17.....	230	580	1,190	1,690	6,850	1,120	870	1,420	620	360	110	90
18.....	280	460	990	1,420	1,600	1,190	870	1,120	500	360	110	90
19.....	2,890	460	1,190	1,190	1,340	1,120	870	1,120	500	360	110	90
20.....	1,420	460	3,930	990	1,120	1,050	1,120	990	500	360	110	90
21.....	3,320	460	5,320	870	990	1,050	1,120	990	500	230	110	360
22.....	4,960	460	2,230	1,190	870	1,120	930	990	500	210	100	990
23.....	1,690	460	1,690	1,190	990	1,120	1,120	930	500	210	100	300
24.....	1,420	460	3,030	1,190	3,030	990	1,120	870	620	210	90	300
25.....	4,960	3,170	1,690	870	3,030	1,690	930	870	620	190	90	390
26.....	1,690	5,500	1,690	670	6,850	1,340	930	760	620	190	130	580
27.....	1,600	2,230	1,690	670	4,100	1,190	870	710	620	170	110	390
28.....	1,510	1,420	1,190	670	3,320	1,120	930	710	500	170	100	300
29.....	2,000	1,420	990	620	.....	1,120	930	670	500	170	100	390
30.....	5,860	3,320	810	580	.....	1,050	1,120	620	500	170	90	300
31.....	3,320	.....	740	580	.....	990	.....	580	.....	170	90	.....

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901-2.												
1.....	300	460	4,100	710	250	1,340	810	1,120	1,120	300	190	140
2.....	300	460	1,510	760	250	1,120	1,120	1,120	1,120	1,120	190	140
3.....	300	360	1,190	990	250	810	1,120	1,510	1,340	1,120	190	140
4.....	300	360	1,190	1,510	330	1,120	810	1,340	1,120	3,170	190	130
5.....	300	2,610	1,510	2,230	330	1,340	810	1,120	1,120	1,790	190	130
6.....	300	1,190	1,510	2,750	710	1,120	1,510	1,340	1,120	1,510	190	130
7.....	300	930	1,260	2,230	870	1,510	3,620	1,790	810	1,120	170	130
8.....	280	760	3,030	2,750	870	1,340	2,110	1,510	810	810	160	130
9.....	280	580	3,030	2,230	3,620	1,120	1,510	1,340	810	580	160	130
10.....	250	540	1,340	1,510	2,110	1,600	1,340	1,340	810	540	160	110
11.....	230	500	1,260	1,120	2,110	2,610	1,120	1,340	670	500	160	110
12.....	210	460	990	1,120	1,690	1,510	1,120	1,340	620	460	160	110
13.....	190	430	810	870	1,340	1,340	810	1,120	620	460	110	110
14.....	170	360	710	710	1,120	1,340	810	1,340	620	390	110	110
15.....	160	330	620	580	2,110	1,120	810	1,340	620	360	110	110
16.....	160	330	580	580	1,890	1,120	1,120	1,340	620	360	160	110
17.....	160	710	500	540	3,770	1,340	1,510	3,170	580	330	280	110
18.....	160	710	460	540	2,110	1,340	2,110	2,610	540	300	190	110
19.....	160	710	430	500	1,340	1,340	2,110	2,610	500	280	160	390
20.....	140	1,190	390	460	1,340	1,340	1,510	1,790	430	280	160	190
21.....	140	810	430	430	1,120	1,120	1,340	1,790	390	250	160	140
22.....	140	6,650	3,030	430	1,120	1,120	1,120	1,510	360	250	160	140
23.....	140	4,100	5,860	360	810	1,120	1,120	1,340	360	250	160	140
24.....	140	2,350	2,230	330	1,120	810	1,120	1,340	390	230	160	140
25.....	140	1,510	3,030	300	1,340	810	810	1,340	360	230	160	280
26.....	140	1,120	3,030	280	1,510	810	810	1,340	360	230	140	280
27.....	160	930	1,340	250	1,340	1,120	810	1,340	360	230	140	990
28.....	190	710	990	250	1,340	810	810	1,340	330	210	140	580
29.....	300	710	990	250	.....	810	810	1,120	330	210	140	810
30.....	390	670	810	250	.....	810	1,120	1,120	300	210	140	250
31.....	580	.....	710	250	.....	810	.....	810	.....	190	140	.....
1902-3.												
1.....	230	250	2,890	2,000	670	460	930	1,050	930	930	210	160
2.....	210	5,320	1,510	6,850	620	460	930	760	870	1,510	210	140
3.....	190	2,890	1,510	11,400	580	460	670	870	810	1,120	210	130
4.....	170	1,510	2,890	3,320	540	460	670	990	760	1,120	210	130
5.....	160	1,120	2,000	1,510	500	460	580	990	540	930	210	130
6.....	160	930	1,510	1,260	460	460	580	990	500	1,120	190	460
7.....	160	5,320	1,510	1,190	540	430	2,230	870	500	930	190	1,120
8.....	170	5,320	1,510	1,120	500	390	2,000	1,120	500	930	190	670
9.....	170	2,890	2,890	1,050	540	360	1,260	870	500	710	190	500
10.....	160	1,510	1,510	870	1,510	360	1,120	930	460	580	190	460
11.....	160	2,890	1,260	870	1,120	1,120	990	930	460	580	190	670
12.....	160	2,350	1,120	710	930	670	990	870	460	500	190	3,320
13.....	160	1,510	1,050	670	710	670	930	870	430	460	190	1,120
14.....	140	1,510	870	580	670	620	810	1,120	430	390	190	460
15.....	160	1,510	710	540	620	580	670	1,120	580	360	190	460
16.....	160	4,270	620	500	580	580	670	1,600	870	330	170	430
17.....	160	2,890	580	500	580	580	620	1,600	540	330	170	430
18.....	160	2,890	500	540	540	580	620	2,000	500	300	170	430
19.....	160	2,000	500	670	500	540	620	1,600	430	300	170	430
20.....	160	1,510	540	1,050	460	500	580	1,340	430	300	170	430
21.....	160	990	500	2,890	460	460	580	1,340	430	300	170	430
22.....	250	930	710	2,000	460	430	930	1,340	390	300	170	430
23.....	230	760	710	3,320	460	460	930	1,120	390	250	170	390
24.....	210	1,510	2,480	11,400	460	460	810	1,120	390	250	230	460
25.....	210	930	1,510	3,320	460	460	810	1,050	390	230	250	500
26.....	210	760	2,000	2,000	460	500	1,260	1,050	390	210	250	500
27.....	190	930	1,510	1,600	460	540	930	1,050	540	210	230	460
28.....	280	930	670	1,120	430	1,120	670	1,190	1,120	210	170	500
29.....	250	1,510	670	930	.....	930	670	1,190	870	210	170	540
30.....	280	3,770	620	670	.....	930	1,050	1,120	810	210	170	460
31.....	1,050	.....	3,320	670	.....	930	.....	1,120	.....	210	160	.....

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903.												
1	460	670										
2	460	670										
3	620	670										
4	2,000	670										
5	2,750	1,050										
6	2,750	7,260										
7	2,750	3,030										
8	2,230	2,230										
9	870	3,770										
10	1,050	2,230										
11	1,420	6,850										
12	1,050	2,750										
13	870	1,600										
14	810	1,890										
15	760	1,600										
16	760	1,420										
17	710	1,120										
18	710	990										
19	710	870										
20	670	870										
21	580	3,770										
22	580	1,600										
23	540	1,600										
24	540	1,050										
25	540	870										
26	540	870										
27	540	870										
28	670	870										
29	990	870										
30	930	870										
31	670											
1904-5.												
1			1,600	1,790	670	810	1,050	300	620	280	140	130
2			1,420	1,790	620	760	1,050	280	580	250	140	110
3			1,120	1,690	620	710	1,050	280	670	250	140	110
4			1,120	1,340	620	620	1,050	250	620	250	140	110
5			1,120	1,120	620	580	990	250	760	230	130	110
6			990	1,120	540	500	990	250	710	230	130	110
7			990	990	540	500	930	250	710	230	130	110
8			930	990	540	460	870	670	670	210	130	110
9			930	930	540	460	810	620	620	210	110	110
10			930	870	540	430	760	760	540	190	110	110
11			1,050	870	360	390	710	930	460	190	110	110
12			1,600	810	360	390	580	810	430	190	110	140
13			4,960	670	360	360	540	930	390	190	110	360
14			5,320	670	360	360	540	1,790	360	190	110	250
15			5,320	670	360	330	540	1,120	330	190	110	140
16			2,350	670	360	330	540	870	330	210	110	130
17			4,960	670	360	300	580	710	300	190	160	210
18			2,610	670	360	330	540	620	280	190	140	210
19			2,000	670	540	460	760	580	280	170	130	160
20		4,960	1,790	760	580	580	670	710	250	170	130	160
21		3,320	1,790	670	760	460	580	810	230	160	130	160
22		2,000	1,790	760	930	810	540	1,790	230	160	130	140
23		1,690	1,510	3,620	1,420	1,190	460	5,880	230	160	110	140
24		1,690	1,790	2,610	1,340	1,890	460	2,000	250	140	110	140
25		1,510	1,420	1,890	1,120	2,610	430	1,790	280	140	110	160
26		1,120	1,120	1,890	930	2,480	430	1,260	280	140	110	990
27		1,120	1,120	1,690	870	1,510	390	930	430	140	110	500
28		1,120	1,420	1,690	930	1,260	360	870	390	140	140	580
29		1,120	7,700	1,510		990	330	760	300	140	130	670
30		1,120	3,470	1,120		810	330	620	280	140	130	810
31			2,480	810		710		540		140	130	

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	670	430	760	760	1,420	2,000	1,120	760	500	580	130	100
2.....	1,420	390	2,000	760	1,120	1,510	930	810	460	500	130	100
3.....	2,750	430	1,790	710	900	930	760	580	580	460	130	100
4.....	3,030	390	1,420	760	870	810	670	500	620	430	120	100
5.....	2,750	360	810	1,120	810	870	710	460	620	390	120	100
6.....	2,480	360	1,340	1,340	760	1,050	810	430	760	360	120	100
7.....	3,620	300	1,600	1,600	620	1,120	990	390	870	330	120	100
8.....	4,270	300	1,190	1,340	580	1,120	870	390	710	300	120	120
9.....	2,110	300	930	1,340	540	1,190	990	360	810	280	120	120
10.....	1,420	300	810	1,190	500	1,120	810	360	710	250	120	120
11.....	1,050	280	710	1,050	500	870	760	330	870	230	120	100
12.....	810	280	620	930	460	760	620	330	710	230	120	170
13.....	710	280	580	990	430	620	620	250	580	210	130	760
14.....	620	250	540	810	430	580	620	300	580	210	120	2,610
15.....	1,600	250	500	760	390	540	620	540	710	190	120	1,050
16.....	1,190	250	500	870	580	460	620	540	1,690	190	120	870
17.....	1,510	280	2,230	870	6,650	390	620	620	1,190	190	120	460
18.....	1,120	300	1,600	870	4,610	430	620	620	930	170	100	360
19.....	870	1,890	1,510	760	2,890	430	580	670	760	170	100	300
20.....	710	930	1,190	670	3,620	390	580	710	620	170	100	250
21.....	620	810	990	580	2,610	360	620	810	580	160	100	210
22.....	580	620	810	670	2,750	360	620	760	540	140	100	210
23.....	500	540	710	3,470	1,790	360	580	710	460	140	100	230
24.....	620	500	670	3,320	1,690	460	580	620	430	140	100	430
25.....	1,190	430	710	2,230	1,510	390	1,120	620	390	140	100	390
26.....	870	2,000	2,110	1,790	2,230	670	990	670	360	140	100	330
27.....	760	1,190	1,510	1,510	2,000	620	810	580	360	140	100	280
28.....	670	870	1,190	1,260	1,510	620	870	540	460	140	100	230
29.....	810	810	990	1,260	.....	620	760	540	670	140	100	230
30.....	540	760	1,050	1,420	.....	1,050	710	580	760	140	100	210
31.....	430	.....	870	1,600	.....	1,690	.....	540	.....	140	100	.....
1906-7.												
1.....	280	580	.....	.....	.....	.....	.....	.....	.....	.....	.....	148
2.....	300	540	.....	.....	.....	.....	.....	.....	.....	.....	.....	137
3.....	1,050	540	.....	.....	.....	.....	.....	.....	.....	.....	.....	132
4.....	760	620	.....	.....	.....	.....	.....	.....	.....	.....	.....	126
5.....	580	670	.....	.....	.....	.....	.....	.....	.....	.....	.....	120
6.....	460	870	.....	.....	.....	.....	.....	.....	.....	.....	.....	118
7.....	390	9,030	.....	.....	.....	.....	.....	.....	.....	.....	.....	118
8.....	540	4,610	.....	.....	.....	.....	.....	.....	.....	.....	.....	113
9.....	500	2,610	.....	.....	.....	.....	.....	.....	.....	.....	.....	109
10.....	460	3,170	.....	.....	.....	.....	.....	.....	.....	.....	.....	106
11.....	460	2,230	.....	.....	.....	.....	.....	.....	.....	.....	.....	108
12.....	620	2,230	.....	.....	.....	.....	.....	.....	.....	.....	.....	119
13.....	430	15,400	.....	.....	.....	.....	.....	.....	.....	.....	.....	106
14.....	990	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	104
15.....	1,120	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	125
16.....	2,350	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	408
17.....	3,320	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	381
18.....	2,350	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	280
19.....	1,890	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	225
20.....	1,260	.....	.....	.....	.....	.....	.....	.....	.....	.....	100	217
21.....	990	.....	.....	.....	.....	.....	.....	.....	.....	.....	99	179
22.....	870	.....	.....	.....	.....	.....	.....	.....	.....	.....	99	166
23.....	670	.....	.....	.....	.....	.....	.....	.....	.....	.....	98	154
24.....	620	.....	.....	.....	.....	.....	.....	.....	.....	.....	125	148
25.....	540	.....	.....	.....	.....	.....	.....	.....	.....	.....	185	146
26.....	2,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	354	143
27.....	1,790	.....	.....	.....	.....	.....	.....	.....	.....	.....	203	170
28.....	1,050	.....	.....	.....	.....	.....	.....	.....	.....	.....	167	225
29.....	970	.....	.....	.....	.....	.....	.....	.....	.....	.....	160	174
30.....	760	.....	.....	.....	.....	.....	.....	.....	.....	.....	156	158
31.....	620	.....	.....	.....	.....	.....	.....	.....	.....	.....	148	.....

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—
Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1907-8.												
1.....	242	176	925	838	315	453	760	696	775	425	116	139
2.....	309	330	735	925	300	414	750	647	810	390	114	129
3.....	242	219	620	865	390	394	826	656	725	360	112	123
4.....	221	191	548	895	330	375	800	604	730	354	111	117
5.....	199	180	612	1,420	955	363	692	540	678	330	110	112
6.....	201	170	532	1,190	1,220	345	665	540	620	300	108	110
7.....	191	161	1,460	895	925	312	580	580	580	280	106	120
8.....	168	155	1,020	1,120	735	298	540	620	580	262	105	182
9.....	160	150	1,420	1,050	620	292	580	572	580	250	102	118
10.....	149	154	1,050	895	540	298	580	512	560	238	100	114
11.....	146	138	2,430	1,510	540	375	620	512	512	225	99	111
12.....	138	137	2,110	1,160	500	832	688	500	480	217	99	108
13.....	140	140	3,540	949	460	2,230	760	425	425	207	126	108
14.....	144	205	2,110	865	500	6,050	740	439	408	197	111	105
15.....	143	179	1,340	710	492	10,900	730	800	381	195	104	104
16.....	137	242	1,020	665	580	5,590	710	1,260	360	195	104	100
17.....	136	199	810	985	720	2,820	1,940	1,190	375	171	104	100
18.....	136	197	656	810	638	1,690	2,350	1,510	588	161	102	96
19.....	132	528	596	1,160	580	1,220	1,840	1,420	810	154	102	95
20.....	130	1,280	838	1,220	516	1,050	1,510	1,340	826	146	100	93
21.....	128	1,940	3,870	1,050	460	889	1,160	1,190	760	143	99	93
22.....	128	3,500	7,050	865	422	760	907	1,120	665	143	98	95
23.....	126	2,850	6,750	688	397	710	865	949	572	136	98	95
24.....	125	9,030	3,700	620	384	760	2,420	865	508	132	104	93
25.....	122	4,440	3,930	540	404	810	1,420	785	480	129	116	92
26.....	120	3,320	3,930	480	442	810	1,050	710	476	129	111	91
27.....	118	1,890	2,110	425	572	710	925	629	760	128	106	92
28.....	122	2,000	1,600	390	548	665	770	568	580	128	386	92
29.....	193	1,690	1,190	520	500	656	710	620	508	124	486	92
30.....	201	1,190	985	408	.....	937	701	647	460	123	209	89
31.....	240	.....	810	351	.....	790	.....	629	.....	122	159	.....
1908-9.												
1.....	114	1,050	540	710	413	1,230	1,510	795	1,510	186	168	92
2.....	120	755	460	843	444	1,300	1,120	865	1,190	186	163	92
3.....	102	596	425	1,280	532	1,160	925	1,200	985	178	158	90
4.....	96	484	375	1,690	500	1,060	760	1,320	810	176	152	88
5.....	95	411	336	1,130	492	865	760	919	725	186	150	86
6.....	92	360	306	877	484	735	760	730	629	865	145	86
7.....	91	324	295	750	452	629	710	656	580	500	137	84
8.....	89	292	345	612	420	1,050	688	600	540	386	135	84
9.....	85	268	324	540	413	925	688	710	524	321	132	82
10.....	85	250	295	500	406	810	696	710	504	370	128	130
11.....	96	230	275	420	386	665	620	1,300	504	642	125	122
12.....	104	217	1,160	337	386	620	596	1,050	460	500	123	96
13.....	444	205	1,260	370	440	592	588	895	406	413	120	92
14.....	1,570	197	810	353	480	572	580	785	386	353	120	88
15.....	1,500	187	656	1,120	955	556	580	710	373	315	147	86
16.....	1,300	185	560	1,890	2,820	656	556	895	379	276	120	82
17.....	821	189	460	3,170	3,100	730	532	810	350	253	116	88
18.....	580	1,160	408	4,100	3,030	656	500	760	321	284	111	84
19.....	1,380	540	366	5,860	1,840	608	468	710	290	239	109	84
20.....	1,460	810	339	5,320	1,320	572	484	665	290	222	107	229
21.....	865	1,020	336	4,960	1,000	540	432	600	276	209	105	310
22.....	665	1,940	345	2,480	800	488	444	556	261	195	103	168
23.....	540	1,740	838	1,510	740	468	468	516	248	186	103	135
24.....	460	1,120	608	1,120	1,130	456	440	532	234	182	103	120
25.....	422	832	985	865	1,180	504	580	540	222	191	100	118
26.....	384	647	1,200	760	1,000	536	865	715	321	191	123	96
27.....	351	560	2,520	656	.....	1,120	580	1,020	250	207	111	93
28.....	330	480	3,590	564	1,190	665	1,890	883	222	198	100	89
29.....	360	480	1,890	516	.....	810	1,120	1,420	209	191	98	258
30.....	688	665	1,220	460	.....	810	895	1,920	198	178	96	194
31.....	1,840	.....	865	432	.....	1,050	.....	1,690	.....	169	94	.....

Daily discharge, in second-feet, of Bull Run River near Bull Run, Oreg., for 1895-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.	166	1,950	2,110	428	1,100	9,490	628	500	234	191	91	76
2.	155	8,360	1,460	420	854	9,030	1,290	505	224	171	95	74
3.	140	6,130	1,080	396	688	5,680	1,070	1,150	224	168	97	72
4.	132	3,400	875	396	586	3,620	950	1,550	218	163	97	72
5.	130	2,180	760	396	530	2,940	918	1,390	209	160	99	74
6.	434	1,700	600	396	476	1,960	926	1,050	200	160	102	76
7.	382	1,340	555	348	440	1,500	1,110	958	194	160	102	80
8.	283	1,660	530	302	400	1,330	2,060	854	188	158	99	83
9.	245	1,660	670	302	408	1,300	1,630	784	182	155	97	87
10.	202	1,880	530	298	400	1,240	1,300	1,080	182	152	95	91
11.	196	1,440	910	295	424	1,360	1,200	1,030	555	150	93	91
12.	182	1,150	3,370	284	472	1,570	1,090	819	400	145	91	91
13.	174	916	2,540	260	610	1,930	1,040	700	302	140	87	91
14.	165	715	1,600	250	372	1,880	847	640	270	135	87	91
15.	158	590	1,120	244	257	1,860	756	550	257	135	87	91
16.	145	510	925	244	191	1,720	714	495	250	130	85	91
17.	137	852	760	244	665	1,720	700	460	244	128	85	91
18.	132	3,210	628	676	832	1,720	840	432	218	126	85	82
19.	214	6,380	555	688	670	1,770	934	408	277	124	85	80
20.	298	4,730	505	520	640	1,310	1,110	380	302	121	83	80
21.	374	2,460	440	735	610	1,200	1,010	360	302	117	83	85
22.	334	9,490	400	2,750	495	1,440	918	344	284	114	83	83
23.	272	7,260	360	4,520	749	1,390	990	336	260	112	82	82
24.	258	5,350	360	4,100	1,090	1,070	998	328	244	110	82	82
25.	252	2,940	344	3,320	2,200	889	926	320	228	106	82	82
26.	226	1,860	320	1,200	2,120	784	854	328	224	102	80	82
27.	211	1,320	302	1,370	3,580	682	670	336	212	97	80	82
28.	205	3,200	284	1,860	4,270	658	570	284	206	95	85	82
29.	540	4,100	277	1,330	-----	586	510	320	197	93	87	80
30.	414	3,540	300	1,200	-----	545	540	250	197	91	82	87
31.	1,470	-----	480	1,600	-----	570	-----	244	-----	91	82	-----

NOTE.—Daily discharge determined as follows: Jan. 5, 1895, to Nov. 30, 1903, Nov. 20, 1904, to July 10, 1906, and Sept. 13 to Nov. 13, 1906, from gage readings on staff gage just above intake and from open channel rating curve for 1907 to 1910; July 11 to Sept. 12, 1906, by indirect method for shifting channel; Aug. 20, 1907, to July 15, 1908, and Oct. 15 to Dec. 31, 1908, from curve well-defined between 100 and 2,600 second-feet; July 16 to Oct. 14, 1908, and Jan. 1 to July 31, 1909, from fairly well-defined curve; Aug. 1 to Nov. 22, 1909, from curve well defined between 80 and 2,500 second-feet; Nov. 23, 1909, to Sept. 30, 1910, from curve well defined between 70 and 2,500 second-feet. For days since Aug. 1, 1909, for which automatic gage readings are not available the gage readings at headworks and the curve for Aug. 20, 1907, to July 15, 1908, have been used.

Monthly discharge of Bull Run River near Bull Run, Oreg., for 1895-1910.

[Drainage area, 102 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1895.							
January 5-31.	7,700	330	1,470	14.4	14.46	78,700	
February.	1,890	300	739	7.25	7.55	41,000	
March.	2,610	360	773	7.58	8.74	47,500	
April.	2,230	810	1,120	11.0	12.27	66,600	
May.	3,320	580	1,360	13.4	15.45	83,600	
June.	1,050	280	481	4.72	5.27	28,600	
July.	360	170	226	2.22	2.56	13,900	
August.	170	140	154	1.51	1.74	9,470	
September.	360	160	227	2.23	2.49	13,500	
The period.						383,000	

Monthly discharge of Bull Run River near Bull Run, Oreg., for 1895-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1895-96.							
October.....	190	130	149	1.46	1.68	9,160	
November.....	2,750	130	624	6.12	6.83	37,100	
December.....	9,260	710	2,020	19.8	22.83	124,000	
January.....	3,770	760	1,910	18.7	21.56	117,000	
February.....	4,960	580	1,780	17.5	18.87	102,000	
March.....	4,960	710	1,300	12.7	14.64	79,900	
April.....	9,030	620	1,400	13.7	15.29	83,300	
May.....	2,480	1,120	1,560	15.3	17.64	95,900	
June.....	3,320	580	1,150	11.3	12.61	68,400	
July.....	500	170	284	2.78	3.20	17,500	
August.....	210	140	163	1.60	1.84	10,000	
September.....	300	140	173	1.70	1.90	10,300	
The year.....	9,260	130	1,040	10.2	138.89	755,000	
1896-97.							
October.....	2,350	110	225	2.21	2.55	13,800	
November.....	11,400	580	2,570	25.2	28.12	153,000	
December.....	6,850	760	2,460	24.1	27.78	151,000	
January.....	4,960	580	1,200	11.8	13.60	73,800	
February.....	8,580	810	1,920	18.8	19.58	107,000	
March.....	4,960	670	1,310	12.8	14.76	80,600	
April.....	2,750	870	1,590	15.6	17.40	94,600	
May.....	1,050	390	777	7.62	8.78	47,800	
June.....	990	390	510	5.00	5.58	30,300	
July.....	1,120	140	510	5.00	5.76	31,400	
August.....	190	130	142	1.39	1.60	8,730	
September.....	990	160	272	2.67	2.98	16,200	
The year.....	11,400	110	1,120	11.0	148.49	808,000	
1897-98.							
October.....	710	130	274	2.69	3.10	16,800	
November.....	7,920	280	1,860	18.2	20.31	111,000	
December.....	7,920	670	2,090	20.5	23.63	129,000	
January.....	2,000	500	993	9.74	11.23	61,100	
February.....	7,260	620	1,860	18.2	18.95	103,000	
March.....	1,050	360	575	5.64	6.50	35,400	
April.....	2,230	430	976	9.57	10.68	58,100	
May.....	1,120	580	762	7.47	8.61	46,900	
June.....	870	230	444	4.35	4.85	26,400	
July.....	230	140	185	1.81	2.09	11,400	
August.....	280	130	138	1.35	1.56	8,480	
September.....	4,100	100	306	3.00	3.35	18,200	
The year.....	7,920	100	863	8.46	114.86	626,000	
1898-99.							
October.....	2,230	360	704	6.90	7.96	43,300	
November.....	4,100	460	1,520	14.9	16.62	90,400	
December.....	4,960	360	1,150	11.3	13.03	70,700	
January.....	11,400	580	1,930	18.9	21.79	119,000	
February.....	7,480	540	2,060	20.2	21.03	114,000	
March.....	5,140	430	917	8.99	10.36	56,400	
April.....	6,850	580	1,380	13.5	15.06	82,100	
May.....	2,000	810	1,280	12.5	14.41	78,700	
June.....	2,350	760	1,540	15.1	16.85	91,600	
July.....	710	230	438	4.29	4.95	26,900	
August.....	3,320	190	612	6.00	6.92	37,600	
September.....	500	160	304	2.98	3.32	18,100	
The year.....	11,400	160	1,150	11.3	152.30	829,000	
1899-1900.							
October.....	5,500	190	963	9.44	10.88	59,200	
November.....	4,960	330	1,330	13.0	14.50	79,100	
December.....	6,250	710	1,530	15.0	17.29	94,100	
January.....	11,400	500	1,670	16.4	18.91	103,000	
February.....	6,850	430	1,410	13.8	14.37	78,300	
March.....	3,770	500	1,250	12.3	14.18	76,900	
April.....	1,190	360	720	7.06	7.88	42,800	
May.....	1,790	330	676	6.63	7.64	41,600	
June.....	620	250	414	4.06	4.53	24,600	
July.....	810	190	334	3.28	3.78	20,500	
August.....	1,420	140	235	2.30	2.65	14,400	
September.....	1,510	190	378	3.71	4.14	22,500	
The year.....	11,400	140	907	8.89	120.75	657,000	

Monthly discharge of Bull Run River near Bull Run, Oreg., for 1895-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1900-1901.							
October.....	5,860	230	1,370	13.4	15.45	84,200	
November.....	6,850	460	1,460	14.3	15.95	86,900	
December.....	5,320	500	1,480	14.5	16.72	91,000	
January.....	11,400	430	1,540	15.1	17.41	94,700	
February.....	15,200	300	2,280	22.4	23.33	127,000	
March.....	3,320	990	1,310	12.8	14.76	80,600	
April.....	1,890	870	1,040	10.2	11.38	61,900	
May.....	2,000	580	1,030	10.1	11.64	63,300	
June.....	930	500	582	5.71	6.37	34,600	
July.....	500	170	335	3.28	3.78	20,600	
August.....	170	90	122	1.20	1.38	7,500	
September.....	990	90	210	2.06	2.30	12,500	
The year.....	15,200	90	1,060	10.4	140.47	765,000	
1901-2.							
October.....	580	140	229	2.25	2.59	14,100	
November.....	6,850	330	1,120	11.0	12.27	66,600	
December.....	5,860	390	1,580	15.5	17.87	97,200	
January.....	4,100	250	905	8.87	10.23	55,600	
February.....	3,770	250	1,360	13.3	13.85	75,500	
March.....	2,610	810	1,190	11.7	13.49	73,200	
April.....	3,620	810	1,260	12.4	13.83	75,000	
May.....	3,170	810	1,480	14.5	16.72	91,000	
June.....	1,340	300	652	6.40	7.14	38,800	
July.....	3,170	190	590	5.78	6.66	36,300	
August.....	280	110	162	1.69	1.83	9,960	
September.....	990	110	217	2.13	2.38	12,900	
The year.....	6,850	110	892	8.75	118.86	646,000	
1902-3.							
October.....	1,050	140	215	2.11	2.43	13,200	
November.....	5,320	250	2,110	20.7	23.09	126,000	
December.....	7,920	500	1,360	13.3	15.33	83,600	
January.....	11,400	500	2,170	21.3	24.56	133,000	
February.....	2,610	430	600	5.88	6.12	33,300	
March.....	1,120	360	579	5.68	6.55	35,600	
April.....	4,270	580	904	8.86	9.88	53,800	
May.....	2,000	760	1,140	11.2	12.91	70,100	
June.....	2,610	390	574	5.63	6.28	34,200	
July.....	1,510	210	526	5.16	5.95	32,300	
August.....	250	160	192	1.88	2.17	11,800	
September.....	3,320	130	558	5.47	6.10	33,200	
The year.....	11,400	130	912	8.94	121.37	660,000	
1903-4.							
October.....	5,320	460	1,020	10.0	11.53	62,700	
November.....	9,030	670	1,850	18.1	20.19	110,000	
December.....	6,050	760	1,670	16.4	18.91	103,000	
January.....	6,850	810	1,860	18.2	20.98	114,000	
February.....	3,320	620	1,240	12.2	13.16	71,300	
March.....	6,050	990	1,780	17.5	20.18	109,000	
April.....	3,320	1,120	1,840	18.0	20.08	109,000	
May.....	1,420	670	995	9.75	11.24	61,200	
June.....	1,120	280	689	6.75	7.53	41,000	
July.....	300	160	213	2.09	2.41	13,100	
August.....	190	130	149	1.46	1.68	9,160	
September.....	160	80	104	1.02	1.14	6,190	
The year.....	9,030	80	1,120	11.0	149.03	810,000	

Monthly discharge of Bull Run River near Bull Run, Oreg., for 1895-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1904-5.							
October.....	1,120	110	356	3.49	4.02	21,900	
November.....	4,960	300	1,040	10.2	11.38	61,900	
December.....	7,700	930	2,220	21.8	25.13	136,000	
January.....	3,620	670	1,230	12.1	13.95	75,600	
February.....	1,420	360	648	6.35	6.61	36,000	
March.....	2,610	300	786	7.71	8.89	48,300	
April.....	1,050	330	662	6.49	7.24	39,400	
May.....	5,860	250	977	9.58	11.04	60,100	
June.....	760	230	427	4.19	4.68	25,400	
July.....	280	140	187	1.83	2.11	11,500	
August.....	160	110	125	1.23	1.42	7,690	
September.....	990	110	243	2.38	2.66	14,500	
The year.....	7,700	110	743	7.28	99.13	538,000	
1905-6.							
October.....	4,270	430	1,360	13.3	15.33	83,600	
November.....	2,000	250	569	5.58	6.23	33,900	
December.....	2,230	500	1,100	10.8	12.45	67,600	
January.....	4,100	580	1,250	12.3	14.18	76,900	
February.....	6,650	390	1,600	15.7	16.35	88,900	
March.....	2,000	360	786	7.71	8.89	48,300	
April.....	1,120	580	752	7.37	8.22	44,700	
May.....	810	250	546	5.35	6.17	33,600	
June.....	1,690	360	676	6.63	7.40	40,200	
July.....	580	140	237	2.32	2.68	14,600	
August.....	130	100	112	1.10	1.27	6,890	
September.....	2,610	100	358	3.51	3.92	21,300	
The year.....	6,650	100	779	7.64	103.09	560,000	
1906-7.							
October.....	3,320	280	1,000	9.80	11.30	61,500	
November.....	15,400	500	2,640	25.9	28.90	157,000	
December.....	10,700	360	1,520	14.9	17.18	93,500	
January.....	4,960	250	939	9.21	10.62	57,700	
February.....	7,920	760	2,050	20.1	20.93	114,000	
March.....	1,260	430	757	7.42	8.55	46,500	
April.....	4,100	620	1,460	14.3	15.95	86,900	
May.....	1,120	330	624	6.12	7.06	38,400	
June.....	1,120	250	598	5.86	6.54	35,600	
July.....	810	125	296	2.90	3.34	18,200	
August.....	354	98	127	1.25	1.44	7,810	
September.....	408	104	165	1.62	1.81	9,820	A. A.
The year.....	15,400	98	1,000	9.80	133.62	727,000	
1907-8.							
October.....	309	118	164	1.61	1.86	10,100	A.
November.....	9,030	137	1,230	12.1	13.50	73,200	B.
December.....	7,050	532	1,950	19.1	22.02	120,000	B.
January.....	1,510	351	854	8.37	9.65	52,500	A.
February.....	1,220	300	551	5.40	5.80	31,700	A.
March.....	10,900	292	1,450	14.2	16.37	89,200	B.
April.....	2,420	540	986	9.67	10.79	58,700	A.
May.....	1,510	425	777	7.62	8.78	47,800	A.
June.....	826	360	586	5.75	6.42	34,900	A.
July.....	425	122	209	2.05	2.36	12,900	B.
August.....	480	98	132	1.29	1.49	8,120	B.
September.....	182	89	107	1.05	1.17	6,370	B.
The year.....	10,900	89	752	7.37	100.21	545,000	

Monthly discharge of Bull Run River near Bull Run, Oreg., for 1895-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1908-9.							
October.....	1,840	85	553	5.42	6.25	34,000	B.
November.....	1,940	185	606	5.94	6.63	36,100	A.
December.....	3,590	275	787	7.72	8.90	48,400	A.
January.....	5,860	337	1,490	14.6	16.83	91,600	B.
February.....	3,100	386	981	9.62	10.02	54,500	B.
March.....	1,300	456	739	7.25	8.36	45,400	A.
April.....	3,240	432	816	8.00	8.93	48,600	A.
May.....	1,920	516	886	8.69	10.02	54,500	A.
July.....	1,510	198	473	4.64	5.18	28,100	A.
July.....	865	169	291	2.85	3.29	17,900	A.
August.....	168	94	123	1.21	1.40	7,560	A.
September.....	310	82	118	1.16	1.29	7,020	A.
The year.....	5,860	82	654	6.41	87.10	474,000	
1909-10.							
October.....	1,470	130	278	2.73	3.15	17,100	A.
November.....	9,490	510	3,080	30.2	33.69	183,000	C.
December.....	3,370	277	837	8.21	9.46	51,500	B.
January.....	4,520	244	1,010	9.90	11.41	62,100	B.
February.....	4,270	191	933	9.15	9.53	51,800	B.
March.....	9,490	545	2,090	20.5	23.63	129,000	B.
April.....	2,060	510	970	9.51	10.61	57,700	A.
May.....	1,550	244	619	6.07	7.00	38,100	A.
June.....	555	182	249	2.44	2.72	14,800	A.
July.....	191	91	132	1.29	1.49	8,120	A.
August.....	102	80	88.7	.870	1.00	5,450	A.
September.....	91	72	83.0	.814	.91	4,940	A.
The year.....	9,490	72	861	8.44	114.60	624,000	

NOTE.—Discharge Dec. 1, 1903, to Nov. 19, 1904, and Nov. 14, 1906, to Aug. 19, 1907, estimated from readings on gage No. 2, so called, in the concrete canal leading from the river to the screen house at the head-works. These readings bear a very uncertain relation to the discharge and the records are only roughly approximate.

WILLAMETTE RIVER BASIN.

GENERAL FEATURES.

Willamette River drains a trough-shaped area, extending north and south between the Coast and Cascade ranges in Oregon. The area is roughly rectangular, approximately 140 miles long and about 85 miles wide. The Willamette proper is formed by the junction of three main tributaries which unite in the vicinity of Eugene; these are Middle Fork (considered the continuation of the main stream), Coast Fork, and the McKenzie. The river is navigable for ocean-going vessels from the mouth to Portland, and for ordinary river steamboats from Portland to Corvallis, except during a few months each year. From Corvallis to Eugene the river is navigable for light-draft boats during medium stages of the river. The falls of Willamette River at Oregon City are passed by a series of five locks, which have just been purchased by the United States.

The other principal tributaries of the Willamette are Santiam, Molala, and Clackamas rivers. From the Coast Range flow Long Tom, Marys, Luckiamute, Yamhill, and Tualatin rivers. The drainage

areas of this river and its principal tributaries are given in the following table:

Drainage areas in Willamette River basin.

	Square miles.
Willamette at the mouth.....	11, 150
Willamette at Oregon City.....	10, 200
Willamette at Albany.....	4, 860
Middle Fork of the Willamette.....	1, 480
Coast Fork of the Willamette.....	705
McKenzie River.....	1, 040
Santiam River.....	1, 890
Yamhill River.....	763
Clackamas River.....	927
Tualatin River.....	690

From the summit of the mountain ranges the slopes are steep, but they merge gradually into a wide alluvial valley or gently rolling agricultural lands.

The entire drainage area may still be considered densely forested. The portions of the basin that contribute to the flow of the streams are almost entirely within the boundaries of the national forests, and privately owned timberlands extend from the boundaries of the national forests to the main stream in the valley, except where lands have been cleared.

Although records of precipitation at the summit of the Coast Range are meager, it is likely that the total annual rainfall is as much as 150 inches. On the eastern slope of the Coast Range precipitation decreases very rapidly to about 40 inches, but it gradually increases again until at the summit of the Cascade Range it is approximately 100 inches. From north to south the same general variation is observed, although the differences are not so striking. At the mouth of the river the precipitation is approximately 50 inches, in the vicinity of Corvallis about 40 inches, and at the summit of the Calapooya Mountains, which form the southern boundary of the drainage area, 55 or 60 inches. Except on the summits of the mountain ranges this precipitation is almost entirely rain, 95 per cent falling during nine months, from September to May. On the mountain ranges part of the precipitation is snow, and the country is subject during the spring and fall to warm chinook winds accompanied by rather sudden melting of these snows, which frequently cause considerable damage from floods. During the growing season, when the precipitation rarely exceeds 2 inches, the country is practically arid. Although irrigation has not long been practiced in the valley, it is likely that before many years a large part of the agricultural bottom lands will be placed under irrigation. Small ditches and pumping plants have been constructed, and the returns from irrigated agricultural lands show an increase of from 50 to 500 per cent in production over the nonirrigated lands.

Lying almost wholly within a narrow strip adjacent to the main divide of the Cascades, where the soil and underlying rock is porous, like that in the basin of Deschutes River, on the east side of the range, are a number of lakes and marshes which afford favorable sites for storage reservoirs. As a result the streams flowing through the lakes and marshes experience no pronounced floods and are characterized by a large low-water flow. The effect of reservoirs on the Willamette would not be so marked as on more flashy streams, but their operation would greatly enhance the value of the river for irrigation, power, and navigation.

The highest known flood in the Willamette Valley occurred December, 1861, when the discharge at Albany was 302,000 cubic feet per second. The highest gage reading at Portland since that date occurred in 1894, but was due to backwater from Columbia River. The years 1899 and 1907 were "wet years." The year 1905 was a comparatively dry year. The longest record of stream flow in this basin has been obtained by applying recent measurements made at Albany to records obtained by the United States Weather Bureau since 1878.

The results of profile studies in the Willamette basin have been published by the United States Geological Survey as Water-Supply Paper 349.

MIDDLE FORK OF WILLAMETTE RIVER AT JASPER, OREG.

Location.—In sec. 23, T. 18 S., R. 2 W., just below Jasper post office, 2 miles above Natron, and 3 miles below Fall Creek.

Records presented.—September 16, 1905, to September 30, 1910.

Drainage area.—1,450 square miles.

Gage.—Vertical staff on right bank.

Channel.—Gravel and small bowlders; shifting.

Discharge measurements.—Made from boat or temporary footbridge near gage. Prior to November, 1909, made from cable.

Regulation.—Some water was released during 1909 from a temporary dam at Waldo Lake.

Accuracy.—Results good, except low-water periods of 1907 and 1909, which are only approximate.

Discharge measurements of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905. Sept. 16	L. R. Allen	<i>Feet.</i> 1.25	<i>Sec.-ft.</i> 758	1908. Oct. 12	H. D. McGlashan	<i>Feet.</i> 2.22	<i>Sec.-ft.</i> 1,060
Dec. 29	do	3.27	3,920	1909. Jan. 16	H. D. McGlashan	9.30	35,700
1906. Feb. 3	L. R. Allen	3.87	5,530	16	do	8.80	31,900
Mar. 23	do	<i>a</i> 3.38	3,890	17	do	7.55	21,000
May 5	do	<i>a</i> 3.52	5,280	1910. Aug. 5 ^b	Henshaw and Davenport	2.97	745
Aug. 17	do	1.48	953				
Sept. 17	I. E. Oakes	1.70	1,130				
1907. Jan. 30	I. E. Oakes	7.10	21,100				

^a Affected by log jam.

^b Measurements taken from boat.

Daily gage height, in feet, of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
1.		11.		21.	1.3
2.		12.		22.	1.2
3.		13.		23.	1.2
4.		14.		24.	1.2
5.		15.		25.	1.2
6.		16.	1.25	26.	1.3
7.		17.	1.3	27.	1.5
8.		18.	1.3	28.	1.9
9.		19.	1.3	29.	1.7
10.		20.	1.3	30.	1.6

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	1.5	1.7	3.2	3.6	3.8	4.4	4.6	3.6	4.0	2.6	1.7	1.4
2.	1.5	1.7	3.2	3.1	3.8	4.1	4.2	3.5	3.9	2.6	1.7	1.4
3.	1.4	1.7	3.4	3.1	3.9	4.0	4.1	3.5	3.8	2.5	1.6	1.4
4.	1.4	1.7	3.6	3.1	3.7	3.9	3.8	3.4	4.1	2.5	1.6	1.4
5.	1.4	1.7	3.2	3.0	3.6	3.7	3.7	3.4	4.0	2.5	1.7	1.4
6.	1.9	1.7	3.1	3.2	3.6	3.7	3.6	3.3	4.1	2.4	1.6	1.4
7.	3.1	1.6	3.2	3.2	3.4	3.8	3.6	3.3	4.4	2.3	2.0	1.4
8.	2.8	1.6	3.5	3.3	3.3	3.9	3.5	3.2	4.3	2.2	1.8	1.4
9.	2.2	1.6	3.1	4.6	3.2	4.0	3.7	3.2	4.4	2.1	2.0	1.5
10.	1.9	1.5	2.9	4.3	3.1	4.1	3.6	3.4	4.5	2.1	2.2	1.5
11.	1.8	1.5	2.6	4.0	3.0	3.9	3.4	3.5	4.2	2.0	2.2	1.4
12.	1.7	1.5	2.5	4.2	2.9	3.7	3.2	3.3	4.1	2.0	2.3	1.5
13.	1.7	1.5	2.4	4.5	2.8	3.5	3.2	3.2	4.0	2.0	2.0	2.2
14.	1.7	1.4	2.3	4.2	2.8	3.3	3.1	3.1	3.8	1.9	2.2	1.9
15.	1.6	1.4	2.3	4.1	2.8	3.2	3.0	3.6	3.7	1.9	1.5	2.4
16.	2.5	1.4	2.2	6.3	2.9	3.0	3.0	3.4	4.4	1.9	1.5	2.0
17.	2.1	1.4	2.3	5.9	3.1	2.9	3.1	3.2	4.2	2.0	1.5	1.7
18.	2.6	1.7	2.4	4.9	3.4	2.8	3.0	3.0	3.9	1.8	1.5	1.6
19.	2.5	1.9	2.5	4.2	5.1	2.8	2.9	2.9	3.6	1.8	1.5	1.5
20.	2.1	3.0	2.9	4.0	5.05	2.8	2.9	2.9	3.5	1.8	1.5	1.5
21.	2.0	2.3	2.8	3.5	5.4	3.0	2.9	3.2	3.3	1.7	1.4	1.5
22.	1.9	2.1	2.6	3.4	5.1	3.2	3.0	3.4	3.7	1.6	1.4	1.4
23.	1.8	2.0	2.5	4.0	4.8	3.2	3.1	3.6	3.1	1.7	1.4	1.5
24.	1.7	1.9	2.4	5.2	5.5	3.3	3.4	3.4	3.1	1.7	1.4	1.5
25.	1.9	1.8	2.3	5.0	5.5	3.4	3.4	3.4	2.8	1.7	1.4	1.6
26.	2.8	1.8	3.6	4.8	4.9	3.5	3.6	3.3	2.8	1.8	1.4	1.6
27.	2.4	2.8	4.1	4.7	5.0	3.4	3.4	3.3	2.8	1.7	1.3	1.5
28.	2.2	2.5	3.9	4.2	4.7	3.3	3.8	4.2	2.9	1.7	1.4	1.5
29.	1.9	2.4	3.4	4.0	-----	3.3	3.7	5.7	2.8	1.6	1.4	1.4
30.	1.9	3.1	3.5	3.9	-----	3.3	3.6	5.1	2.7	1.6	1.4	1.4
31.	1.8	-----	4.1	3.8	-----	4.1	-----	4.6	-----	1.6	1.4	-----

Daily gage height, in feet, of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1.4	1.6	2.5	3.8	7.9	3.9	3.8	3.1	3.0	2.4	1.7	1.6
2.....	1.4	1.6	2.5	3.7	7.5	3.8	3.8	3.0	2.9	2.5	1.7	1.6
3.....	1.5	1.6	2.4	5.7	9.5	3.7	3.6	3.0	2.9	2.5	1.7	1.6
4.....	1.9	1.6	2.3	11.0	12.3	3.6	3.4	3.0	2.8	2.6	1.7	1.6
5.....	1.5	2.0	2.4	7.1	14.4	3.4	3.6	2.9	2.8	2.5	1.7	1.6
6.....	1.5	2.0	2.7	5.7	13.45	3.3	5.7	2.9	2.7	2.4	1.7	1.6
7.....	1.5	3.3	2.7	5.0	8.4	3.4	10.35	3.0	2.7	2.6	1.7	1.6
8.....	1.4	4.6	3.6	4.5	7.0	3.3	7.9	2.9	2.7	2.7	1.8	1.6
9.....	1.4	3.7	3.6	4.1	6.2	3.2	6.6	3.0	2.6	2.2	2.0	1.6
10.....	1.4	3.2	3.6	4.0	5.8	3.3	6.6	3.1	2.5	2.1	2.0	1.6
11.....	1.4	3.7	3.7	3.7	5.5	3.3	6.1	3.5	2.9	2.0	1.9	1.5
12.....	1.5	3.2	3.5	3.7	5.2	3.3	5.8	3.4	3.3	2.0	1.8	1.5
13.....	1.7	4.1	3.2	3.5	4.9	3.2	5.7	3.2	3.1	2.0	1.7	1.5
14.....	1.6	4.9	3.1	3.4	4.6	3.2	5.5	3.0	3.1	1.9	1.7	1.5
15.....	1.6	5.6	3.0	3.2	4.4	3.1	5.1	2.9	3.1	2.0	1.7	1.5
16.....	2.2	6.1	4.4	3.1	4.3	3.0	4.7	2.9	3.0	2.0	1.7	1.5
17.....	2.9	5.9	4.0	3.0	4.3	3.0	4.4	3.2	2.9	1.9	1.7	1.8
18.....	2.7	6.0	3.7	2.8	4.0	5.4	4.2	3.2	2.8	1.9	1.7	1.7
19.....	2.6	4.8	4.4	2.9	3.9	5.5	4.8	3.5	2.7	1.9	1.7	1.6
20.....	2.2	4.2	5.7	2.8	3.7	6.5	4.7	3.5	2.7	1.8	1.6	1.6
21.....	2.1	4.5	5.3	2.8	3.6	5.7	4.4	3.4	2.6	1.8	1.6	1.5
22.....	1.9	4.3	4.6	2.8	3.6	5.0	4.3	3.3	2.6	1.8	1.6	1.5
23.....	1.8	4.0	4.3	3.0	3.7	4.8	4.2	3.2	2.6	1.8	1.6	1.5
24.....	1.7	3.6	4.2	3.3	3.6	4.5	4.1	3.1	2.6	1.8	1.6	1.5
25.....	1.7	3.3	4.5	3.6	4.0	4.2	3.9	3.0	2.6	1.8	1.8	1.5
26.....	1.6	3.2	5.3	3.8	4.1	4.0	3.6	3.0	2.5	1.8	1.8	1.5
27.....	2.1	3.0	4.8	4.0	3.8	3.8	3.5	2.9	2.5	1.8	1.7	1.5
28.....	1.9	2.8	4.3	5.0	3.6	3.7	3.4	2.9	2.5	1.8	1.7	1.7
29.....	1.7	2.8	4.0	7.5	-----	3.7	3.3	2.9	2.4	1.8	1.6	1.7
30.....	1.7	2.6	4.0	7.0	-----	3.7	3.2	2.9	2.4	1.8	1.6	1.7
31.....	1.6	-----	4.0	6.8	-----	3.8	-----	2.8	-----	1.8	1.6	-----
1907-8.												
1.....	1.7	1.6	3.0	5.3	3.3	3.6	4.3	4.0	3.6	3.5	2.4	2.3
2.....	1.9	1.8	2.9	5.0	3.3	3.5	4.2	4.0	3.6	3.5	2.4	2.3
3.....	1.8	1.9	2.7	4.8	3.3	3.5	4.3	4.0	3.6	3.5	2.4	2.2
4.....	1.7	1.7	2.5	4.8	3.3	3.5	4.3	4.0	3.7	3.4	2.4	2.2
5.....	1.6	1.6	2.7	4.6	3.3	3.4	4.1	3.7	3.6	3.3	2.4	2.2
6.....	1.6	1.6	2.5	4.6	3.7	3.3	4.0	3.6	3.6	3.2	2.4	2.2
7.....	1.6	1.6	2.5	4.4	4.7	3.3	3.9	3.9	3.6	3.2	2.4	2.2
8.....	1.6	1.6	3.0	4.3	4.3	3.2	3.7	4.2	3.7	3.1	2.3	2.3
9.....	1.6	1.5	2.7	6.0	4.3	3.2	3.6	4.1	3.9	3.1	2.3	2.3
10.....	1.5	1.5	3.0	5.6	4.1	3.2	3.5	3.9	4.1	2.9	2.3	2.2
11.....	1.5	1.5	3.7	5.1	4.0	3.3	3.7	3.8	4.2	2.9	2.3	2.2
12.....	1.5	1.5	3.6	4.9	4.0	3.3	3.9	3.7	4.1	2.9	2.3	2.2
13.....	1.5	1.5	6.5	4.8	3.9	3.4	4.0	3.6	4.0	2.9	2.3	2.2
14.....	1.5	1.6	5.8	5.0	3.8	3.3	4.1	3.6	4.0	3.1	2.4	2.2
15.....	1.5	2.0	4.7	5.0	3.8	5.4	4.1	4.0	4.0	2.7	2.4	2.2
16.....	1.5	1.7	4.0	4.8	3.8	7.3	4.2	4.5	3.9	2.7	2.3	2.2
17.....	1.5	1.7	4.5	4.6	3.9	7.1	4.0	4.5	3.7	2.7	2.3	2.2
18.....	1.5	1.7	3.6	4.3	3.9	6.5	4.1	4.6	3.8	2.7	2.3	2.2
19.....	1.5	1.7	3.4	4.3	3.7	5.8	4.1	5.0	3.8	2.6	2.3	2.2
20.....	1.5	2.4	3.9	5.0	3.6	5.2	4.2	4.9	3.8	2.6	2.3	2.2
21.....	1.5	3.2	6.6	4.9	3.5	4.7	4.3	4.6	4.6	2.6	2.3	2.1
22.....	1.5	2.9	10.5	4.6	3.4	4.7	4.2	4.4	4.2	2.6	2.3	2.1
23.....	1.5	3.6	9.8	4.4	3.3	4.2	4.1	4.2	4.0	2.6	2.3	2.1
24.....	1.5	5.8	8.6	4.2	3.3	4.1	4.6	4.1	4.0	2.6	2.3	2.1
25.....	1.5	6.4	10.6	4.0	3.3	4.2	4.9	4.0	4.0	2.6	2.2	2.1
26.....	1.5	5.0	13.7	3.9	3.3	4.0	4.5	3.9	3.9	2.5	2.2	2.1
27.....	1.5	4.3	9.5	3.7	3.5	4.2	4.3	3.8	3.8	2.5	2.2	2.1
28.....	1.5	3.8	7.4	3.6	3.6	4.3	4.1	3.7	3.7	2.5	2.2	2.1
29.....	1.5	3.6	6.4	3.6	3.5	3.9	3.9	3.7	3.5	2.5	2.5	2.1
30.....	1.8	3.8	5.5	3.6	-----	4.2	3.9	3.7	3.5	2.5	2.5	2.1
31.....	1.7	-----	5.2	3.4	-----	4.2	-----	3.6	-----	2.5	2.5	-----

Daily gage height, in feet, of Middle Fork of Willamette River at Jasper, Oreg., for 1895-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	2.1	3.7	3.0	4.0	3.8	5.4	3.7	3.3	4.7	2.6	2.5	2.3
2.....	2.1	3.4	3.0	3.8	3.7	5.5	3.9	3.3	4.8	2.6	2.5	2.3
3.....	2.2	3.2	2.9	4.0	4.1	5.4	3.8	3.5	4.6	2.6	2.4	2.3
4.....	2.2	3.1	2.9	5.8	4.1	5.3	3.8	4.0	4.3	2.6	2.4	2.3
5.....	2.2	3.0	2.8	6.6	4.1	5.0	3.7	3.9	4.1	2.6	2.4	2.3
6.....	2.1	2.9	2.8	7.1	4.0	4.8	3.8	3.7	3.9	3.1	2.4	2.3
7.....	2.1	2.8	2.7	7.8	3.8	4.5	3.6	3.5	3.7	3.5	2.4	2.3
8.....	2.1	2.7	2.7	7.8	3.7	4.8	3.5	3.3	3.5	3.0	2.4	2.3
9.....	2.1	2.7	2.7	6.2	3.6	4.6	3.4	3.3	3.4	2.8	2.4	2.3
10.....	2.0	2.6	2.7	5.3	3.7	4.5	3.4	3.4	3.3	2.8	2.4	2.3
11.....	2.0	2.6	2.6	4.8	3.7	4.2	3.8	3.5	3.3	2.7	2.4	2.4
12.....	2.1	2.5	2.6	4.5	3.7	4.0	3.2	3.4	3.4	2.7	2.4	2.4
13.....	2.27	2.6	2.9	4.3	4.4	3.9	3.1	3.3	3.3	2.6	2.4	2.3
14.....	3.6	2.5	3.0	4.1	4.7	3.8	3.3	3.2	3.2	2.6	2.3	2.3
15.....	6.0	2.5	2.9	6.6	4.7	3.8	3.3	3.1	3.2	2.6	2.3	2.3
16.....	4.6	2.5	2.9	9.8	4.9	3.7	3.5	3.1	3.2	2.6	2.3	2.3
17.....	3.8	2.5	2.8	7.5	7.1	4.0	3.7	3.1	3.3	2.6	2.3	2.3
18.....	3.3	2.6	2.7	8.9	6.4	4.3	3.8	3.0	3.2	2.6	2.2	2.3
19.....	3.1	3.1	2.7	7.7	6.2	4.3	3.8	3.0	3.2	2.6	2.2	2.3
20.....	4.0	3.3	2.7	8.2	5.9	3.8	4.5	3.0	3.2	2.5	2.2	2.3
21.....	3.8	4.8	2.6	9.7	5.8	3.7	3.2	3.0	3.2	2.5	2.2	2.3
22.....	3.4	4.7	2.8	8.5	5.3	3.6	3.1	3.0	3.2	2.5	2.2	2.3
23.....	3.3	4.8	3.1	7.0	4.9	3.3	3.1	2.9	3.4	2.5	2.3	2.3
24.....	3.2	4.7	4.2	6.1	5.5	3.3	3.0	2.9	3.2	2.5	2.3	2.3
25.....	3.1	4.3	3.6	5.6	6.0	3.2	3.0	2.9	2.9	2.5	2.3	2.3
26.....	3.0	4.0	4.5	5.1	5.6	3.2	3.1	3.0	2.8	2.5	2.3	2.3
27.....	3.0	3.8	4.5	4.7	5.2	3.2	3.3	3.5	2.8	2.6	2.3	2.3
28.....	3.0	3.5	4.5	4.5	5.5	3.4	3.7	4.2	2.7	2.6	2.3	2.3
29.....	2.95	3.8	5.5	4.3	-----	3.5	3.6	4.2	2.7	2.5	2.3	2.4
30.....	2.95	3.1	4.7	4.1	-----	3.5	3.4	4.3	2.7	2.5	2.3	2.5
31.....	3.6	-----	4.7	4.0	-----	3.5	-----	4.7	-----	2.5	2.3	-----
1909-10.												
1.....	2.5	4.4	6.8	5.0	5.5	11.4	4.4	4.3	3.8	3.3	3.0	2.9
2.....	2.5	3.2	6.2	4.8	5.2	10.2	4.5	4.2	3.8	3.3	3.0	2.9
3.....	2.4	3.1	5.7	4.6	5.0	8.7	4.7	4.4	3.7	3.3	3.0	2.9
4.....	2.3	2.8	5.4	4.4	4.8	7.9	4.7	4.4	3.6	3.3	3.0	2.9
5.....	2.3	2.8	5.3	4.2	4.7	7.3	4.6	4.4	3.6	3.3	3.0	2.9
6.....	2.3	2.9	5.0	4.2	4.7	6.8	4.7	4.3	3.6	3.3	3.0	2.9
7.....	2.4	2.8	5.0	4.3	4.6	6.2	4.8	4.3	3.5	3.2	3.0	2.9
8.....	2.3	2.7	5.1	4.4	4.5	5.9	4.7	4.3	3.5	3.2	3.0	2.9
9.....	2.3	2.8	5.8	4.3	4.4	5.7	4.7	4.4	3.5	3.2	3.0	2.9
10.....	2.4	3.1	6.0	4.2	4.5	5.5	4.7	5.3	3.5	3.2	3.0	2.9
11.....	2.4	3.9	5.6	4.2	4.5	5.4	4.7	5.6	3.6	3.2	3.0	2.9
12.....	2.6	3.1	6.8	4.2	4.6	5.4	4.7	5.2	3.6	3.2	3.0	2.9
13.....	2.7	3.0	7.9	4.1	4.7	5.5	4.6	5.0	3.5	3.2	3.0	2.9
14.....	2.7	3.0	7.0	4.1	5.0	5.6	4.5	4.7	3.5	3.2	3.0	3.0
15.....	2.7	2.8	6.2	4.0	5.1	5.6	4.4	4.5	3.5	3.2	3.0	3.0
16.....	2.7	2.7	5.7	4.0	4.8	5.5	4.4	4.4	3.6	3.2	3.0	2.9
17.....	2.3	2.6	5.4	3.9	4.7	5.4	4.4	4.3	3.6	3.1	2.9	3.0
18.....	2.3	2.9	5.2	3.9	5.4	5.3	4.4	4.2	3.5	3.1	2.9	3.0
19.....	2.3	4.9	5.0	4.7	6.7	5.4	4.5	4.1	3.5	3.1	2.9	3.0
20.....	2.4	8.8	4.9	4.5	6.2	5.3	4.8	4.0	3.5	3.1	2.9	3.2
21.....	2.5	6.7	4.7	4.4	5.8	5.0	4.8	4.0	3.6	3.1	2.9	3.3
22.....	2.5	10.2	4.7	4.9	5.5	5.1	4.6	4.0	3.6	3.1	2.9	3.1
23.....	2.5	16.6	4.6	6.2	5.5	5.7	4.6	3.9	3.7	3.1	2.9	3.0
24.....	2.4	11.6	4.4	5.8	5.6	5.3	4.7	4.0	3.6	3.1	2.9	2.9
25.....	2.4	8.5	4.4	5.2	7.2	5.1	4.8	4.1	3.5	3.1	2.9	2.9
26.....	2.3	7.2	4.3	5.2	6.7	5.0	4.8	4.0	3.4	3.1	2.9	2.9
27.....	2.3	6.5	4.2	5.9	6.7	4.8	4.7	4.0	3.4	3.1	2.9	2.9
28.....	2.3	6.4	4.1	7.2	8.4	4.7	4.5	3.9	3.4	3.0	2.9	2.9
29.....	2.4	6.2	4.1	6.4	-----	4.6	4.3	3.9	3.4	3.0	2.9	2.9
30.....	2.4	7.2	4.1	6.0	-----	4.5	4.3	3.9	3.3	3.0	2.9	2.9
31.....	3.2	-----	5.4	5.8	-----	4.4	-----	3.9	-----	3.0	2.9	-----

NOTE.—From June to August, 1906, the discharge showed considerable daily fluctuation, caused by storage at logging dams. There was also some backwater from log jams during the same period, especially Aug. 7 to 14.

Daily discharge, in second-feet, of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
16.....	765	21.....	800	26.....	800
17.....	800	22.....	730	27.....	960
18.....	800	23.....	730	28.....	1,380
19.....	800	24.....	730	29.....	1,150
20.....	800	25.....	730	30.....	1,050

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	960	1,150	3,520	4,780	5,370	7,420	8,190	4,780	6,000	2,480	1,150	880
2.....	960	1,150	3,520	3,520	5,370	6,340	6,690	4,500	5,680	2,480	1,150	880
3.....	880	1,150	4,240	3,520	5,680	6,000	6,340	4,500	5,370	2,290	1,050	880
4.....	880	1,150	4,780	3,520	5,070	5,680	5,370	4,240	6,340	2,290	1,050	880
5.....	880	1,150	3,750	3,300	4,780	5,070	5,070	4,240	6,000	2,290	1,150	880
6.....	1,380	1,150	3,520	3,750	4,780	5,070	4,780	3,990	6,340	2,110	1,050	880
7.....	3,520	1,050	3,750	3,750	4,240	5,370	4,780	3,990	7,420	1,940	1,510	880
8.....	2,870	1,050	4,500	3,990	3,990	5,680	4,500	3,750	7,050	1,790	1,000	880
9.....	1,790	1,050	3,520	8,190	3,750	6,000	5,070	3,750	7,420	1,650	1,000	960
10.....	1,380	960	3,080	7,050	3,520	6,340	4,780	4,240	7,800	1,650	1,000	960
11.....	1,260	960	2,480	6,000	3,300	5,680	4,240	4,500	6,690	1,510	1,000	880
12.....	1,150	960	2,290	6,690	3,080	5,070	3,750	3,990	6,340	1,510	1,000	960
13.....	1,150	960	2,110	7,800	2,870	4,500	3,750	3,750	6,000	1,510	1,000	1,790
14.....	1,150	880	1,940	6,690	2,870	3,990	3,520	3,520	5,370	1,380	1,000	1,380
15.....	1,050	880	1,940	6,340	2,870	3,750	3,300	4,780	5,070	1,380	960	2,110
16.....	2,290	880	1,790	16,400	3,080	3,300	3,300	4,240	7,420	1,380	960	1,510
17.....	1,650	880	1,940	14,200	3,520	3,080	3,520	3,750	6,690	1,510	960	1,150
18.....	2,480	1,150	2,110	9,420	4,240	2,870	3,300	3,300	5,680	1,260	960	1,050
19.....	2,290	1,380	2,290	6,690	10,300	2,870	3,080	3,080	4,780	1,260	960	960
20.....	1,650	3,300	3,080	6,000	10,100	2,870	3,080	3,080	4,500	1,260	960	960
21.....	1,510	1,940	2,870	4,500	11,700	3,300	3,080	3,750	3,990	1,150	880	960
22.....	1,380	1,650	2,480	4,240	10,300	3,750	3,300	4,240	5,070	1,050	880	880
23.....	1,260	1,510	2,290	6,000	9,000	3,750	3,520	4,780	3,520	1,150	880	960
24.....	1,150	1,380	2,110	10,700	12,200	3,990	4,240	4,240	3,520	1,150	880	960
25.....	1,380	1,260	1,940	9,850	12,200	4,240	4,240	4,240	2,870	1,150	880	1,050
26.....	2,870	1,260	4,780	9,000	9,420	4,500	4,780	3,990	2,870	1,260	880	1,050
27.....	2,110	2,870	6,340	8,590	9,850	4,240	4,240	3,990	2,870	1,150	880	960
28.....	1,790	2,290	5,680	6,690	8,590	3,990	5,370	6,690	3,080	1,150	880	960
29.....	1,380	2,110	4,240	6,000	.....	3,990	5,070	13,200	2,870	1,050	880	880
30.....	1,380	3,520	4,500	5,680	.....	3,990	4,780	10,300	2,670	1,050	880	880
31.....	1,260	.....	6,340	5,370	.....	6,340	.....	8,190	.....	1,050	880	.....
1906-7.												
1.....	880	1,050	2,290	5,370	26,000	3,990	3,750	2,290	2,110	1,260	660	590
2.....	880	1,050	2,290	5,070	23,500	3,750	3,750	2,110	1,940	1,380	660	590
3.....	960	1,050	2,110	13,200	37,600	3,520	3,300	2,110	1,940	1,380	660	590
4.....	1,380	1,050	1,940	46,500	67,600	3,300	2,870	2,110	1,790	1,510	660	590
5.....	960	1,510	2,110	21,100	93,500	2,870	3,300	1,940	1,790	1,380	660	590
6.....	960	1,510	2,670	13,200	81,600	2,670	10,600	1,940	1,650	1,260	660	590
7.....	960	3,990	2,670	9,850	27,800	2,870	46,000	2,110	1,650	1,510	660	590
8.....	880	8,190	4,780	7,800	17,600	2,670	23,800	1,940	1,650	1,650	730	590
9.....	880	5,070	4,780	6,340	13,100	2,480	15,300	2,110	1,510	1,050	880	590
10.....	880	3,750	4,780	6,000	11,100	2,670	15,300	2,290	1,380	960	880	590
11.....	880	5,070	5,070	5,070	9,650	2,670	12,600	3,080	1,940	880	800	530
12.....	960	3,750	4,500	5,070	8,330	2,670	11,100	2,670	2,670	880	730	530
13.....	1,150	6,340	3,750	4,500	7,080	2,480	10,600	2,480	2,290	880	660	530
14.....	1,050	9,420	3,520	4,240	6,000	2,480	9,650	2,110	2,290	800	660	530
15.....	1,050	12,600	3,300	3,750	5,370	2,290	7,900	1,940	2,290	880	660	530
16.....	1,790	15,300	7,420	2,520	5,070	2,110	6,340	1,940	2,110	880	660	530
17.....	3,080	15,300	6,000	3,300	5,070	2,110	5,370	2,480	1,940	800	660	730
18.....	2,670	14,800	5,070	2,870	4,240	2,290	4,780	2,480	1,790	800	660	660
19.....	2,480	9,000	7,420	3,080	3,990	9,650	6,700	3,080	1,650	800	660	590
20.....	1,790	6,690	13,200	2,870	3,520	14,700	6,340	3,080	1,650	730	590	590
21.....	1,650	7,800	11,200	2,870	3,300	10,600	5,370	2,870	1,510	730	590	530
22.....	1,380	7,050	8,190	2,870	3,300	7,480	5,070	2,670	1,510	730	590	530
23.....	1,260	6,000	7,050	3,800	3,520	6,700	4,780	2,480	1,510	730	590	530
24.....	1,150	4,780	6,690	3,990	3,300	5,680	4,500	2,290	1,510	730	590	530
25.....	1,150	3,990	7,800	4,780	4,240	4,780	3,990	2,110	1,510	730	590	530
26.....	1,050	3,750	11,200	5,370	4,500	4,240	3,300	2,110	1,380	730	730	530
27.....	1,650	3,300	9,000	6,000	3,750	3,750	3,080	1,940	1,380	730	660	530
28.....	1,380	2,870	7,050	9,850	3,300	3,520	2,870	1,940	1,380	730	660	660
29.....	1,150	2,870	6,000	23,500	.....	3,520	2,670	1,940	1,260	730	590	660
30.....	1,150	2,480	6,000	20,500	.....	3,520	2,480	1,940	1,260	730	590	660
31.....	1,050	.....	6,000	19,300	.....	3,750	.....	1,790	.....	730	590	.....

Daily discharge, in second-feet, of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	660	590	2,110	8,760	2,670	3,300	5,070	4,240	3,300	3,080	1,260	1,150
2.....	800	730	1,940	7,480	2,670	3,080	4,780	4,240	3,300	3,080	1,260	1,150
3.....	730	800	1,650	6,700	2,670	3,080	5,070	4,240	3,300	3,080	1,260	1,050
4.....	660	660	1,380	6,700	2,670	3,080	5,070	4,240	3,520	2,870	1,260	1,050
5.....	590	590	1,650	6,000	2,670	2,870	4,500	3,520	3,300	2,670	1,260	1,050
6.....	590	590	1,380	6,000	3,520	2,670	4,240	3,300	3,300	2,480	1,260	1,050
7.....	590	590	1,380	5,370	6,340	2,670	3,990	3,990	3,300	2,480	1,260	1,050
8.....	590	590	2,110	5,070	5,070	2,480	3,520	4,780	3,520	2,290	1,150	1,150
9.....	590	530	1,650	12,000	5,070	2,480	3,300	4,500	3,990	2,290	1,150	1,150
10.....	530	530	2,110	10,100	4,500	2,480	3,080	3,990	4,500	1,940	1,150	1,050
11.....	530	530	3,520	7,900	4,240	2,670	3,520	3,750	4,280	1,940	1,150	1,050
12.....	530	530	3,300	7,080	4,240	2,670	3,990	3,520	4,500	1,940	1,150	1,050
13.....	530	530	14,700	6,700	3,990	2,870	4,240	3,300	4,240	1,940	1,150	1,050
14.....	530	590	11,100	7,480	3,750	2,670	4,500	3,300	4,240	2,290	1,260	1,050
15.....	530	880	6,340	7,480	3,750	9,200	4,500	4,240	4,240	1,650	1,260	1,050
16.....	530	660	4,240	6,700	3,750	19,500	4,780	5,680	3,990	1,650	1,150	1,050
17.....	530	660	5,680	6,000	3,990	18,200	4,240	5,680	3,520	1,650	1,150	1,050
18.....	530	660	3,300	5,070	3,990	14,700	4,500	6,000	3,750	1,650	1,150	1,050
19.....	530	660	2,870	5,070	3,520	11,100	4,500	7,480	3,750	1,510	1,150	1,050
20.....	530	1,260	3,990	7,480	3,300	8,330	4,780	7,080	3,750	1,510	1,150	1,050
21.....	530	2,480	15,300	7,080	3,080	6,340	5,070	6,000	6,000	1,510	1,150	960
22.....	530	1,940	47,600	6,000	2,870	6,340	4,780	5,370	4,780	1,510	1,150	960
23.....	530	3,300	40,400	5,370	2,670	4,780	4,500	4,780	4,240	1,510	1,150	960
24.....	530	11,100	29,500	4,780	2,670	4,500	6,000	4,500	4,240	1,510	1,150	960
25.....	530	14,200	48,600	4,240	2,670	4,780	7,080	4,240	4,240	1,510	1,050	960
26.....	530	7,480	84,800	3,990	2,670	4,240	5,680	3,990	3,990	1,380	1,050	960
27.....	530	5,070	37,600	3,520	3,080	4,780	5,070	3,750	3,750	1,380	1,050	960
28.....	530	3,750	20,200	3,300	3,300	5,070	4,500	3,520	3,520	1,380	1,050	960
29.....	530	3,300	14,200	3,300	3,080	3,990	3,990	3,520	3,080	1,380	1,380	960
30.....	730	3,750	9,650	3,300	.....	4,780	3,990	3,520	3,080	1,380	1,380	960
31.....	660	.....	8,330	2,870	.....	4,780	.....	3,300	.....	1,380	1,380	.....
1908-9.												
1.....	960	3,520	2,110	4,240	3,750	9,200	3,520	2,670	6,340	1,510	1,380	1,150
2.....	960	2,870	2,110	3,750	3,520	9,650	3,990	2,670	6,700	1,510	1,380	1,150
3.....	1,050	2,480	1,940	4,240	4,500	9,200	3,750	3,080	6,000	1,510	1,260	1,150
4.....	1,050	2,290	1,940	11,100	4,500	8,760	3,750	4,240	5,070	1,510	1,260	1,150
5.....	1,050	2,110	1,790	15,300	4,500	7,480	3,520	3,990	4,500	1,510	1,260	1,150
6.....	960	1,940	1,790	18,200	4,240	6,700	3,750	3,520	3,990	2,290	1,260	1,150
7.....	960	1,790	1,650	23,100	3,750	5,680	3,300	3,080	3,520	3,080	1,260	1,150
8.....	960	1,650	1,650	23,100	3,520	5,680	3,080	2,670	3,080	2,110	1,260	1,150
9.....	960	1,650	1,650	13,100	3,300	6,000	2,870	2,670	2,870	1,790	1,260	1,150
10.....	880	1,510	1,650	8,760	3,520	5,680	2,870	2,870	2,670	1,790	1,260	1,150
11.....	880	1,510	1,510	6,700	3,520	4,780	3,750	3,080	2,670	1,650	1,260	1,260
12.....	960	1,380	1,510	5,680	3,520	4,240	2,480	2,870	2,870	1,650	1,260	1,260
13.....	1,120	1,510	1,940	5,070	5,370	3,990	2,290	2,670	2,670	1,510	1,260	1,150
14.....	3,300	1,380	2,110	4,500	6,340	3,750	2,670	2,480	2,480	1,510	1,150	1,150
15.....	12,000	1,380	1,940	15,300	6,340	3,750	2,670	2,290	2,480	1,510	1,150	1,150
16.....	6,000	1,380	1,940	40,400	7,080	3,520	2,480	2,290	2,480	1,510	1,150	1,150
17.....	3,750	1,380	1,790	20,900	18,200	4,240	2,480	2,290	2,670	1,510	1,150	1,150
18.....	2,670	1,510	1,650	32,100	14,200	5,070	2,480	2,110	2,480	1,510	1,050	1,150
19.....	2,290	2,290	1,650	22,300	13,100	5,070	2,480	2,110	2,480	1,510	1,050	1,150
20.....	4,240	2,670	1,650	26,200	11,600	3,750	2,480	2,110	2,480	1,380	1,050	1,150
21.....	3,750	6,700	1,510	39,500	11,100	3,520	2,480	2,110	2,480	1,380	1,050	1,150
22.....	2,870	6,340	1,790	28,700	8,760	3,300	2,290	2,110	2,480	1,380	1,050	1,150
23.....	2,670	6,700	2,290	17,600	7,080	2,670	2,290	1,940	2,480	1,380	1,150	1,150
24.....	2,480	6,340	4,780	12,600	9,650	2,670	2,110	1,940	2,480	1,380	1,150	1,150
25.....	2,290	5,070	3,300	10,100	12,000	2,480	2,110	1,940	1,940	1,380	1,150	1,150
26.....	2,110	4,240	5,680	7,900	10,100	2,480	2,290	2,110	1,790	1,380	1,150	1,150
27.....	2,110	3,750	5,680	6,340	8,330	2,480	2,670	3,080	1,790	1,510	1,150	1,150
28.....	2,110	3,080	5,680	5,680	9,650	2,870	3,520	4,780	1,650	1,510	1,150	1,150
29.....	2,020	2,670	9,650	5,070	.....	3,080	3,300	4,780	1,650	1,380	1,150	1,260
30.....	2,020	2,290	6,340	4,500	.....	3,080	2,870	5,070	1,650	1,380	1,150	1,380
31.....	3,300	.....	6,340	4,240	.....	3,080	.....	6,340	.....	1,380	1,150	.....

Daily discharge, in second-feet, of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,380	5,370	11,400	4,400	5,900	52,300	2,940	2,730	1,790	1,090	760	670
2.....	1,380	2,480	8,640	3,880	4,950	38,200	3,160	2,530	1,790	1,090	760	670
3.....	1,260	2,290	6,610	3,390	4,400	23,500	3,630	2,940	1,630	1,090	760	670
4.....	1,150	1,790	5,570	2,940	3,880	17,600	3,630	2,940	1,480	1,090	760	670
5.....	1,150	1,790	5,250	2,530	3,630	14,000	3,390	2,940	1,480	1,090	760	670
6.....	1,150	1,940	4,400	2,530	3,630	11,400	3,630	2,730	1,480	1,090	760	670
7.....	1,260	1,790	4,400	2,730	3,390	8,640	3,880	2,730	1,340	970	760	670
8.....	1,150	1,650	4,670	2,940	3,160	7,390	3,630	2,730	1,340	970	760	670
9.....	1,150	1,790	6,990	2,730	2,940	6,610	3,630	2,940	1,340	970	760	670
10.....	1,150	2,290	7,800	2,530	3,160	5,900	3,630	5,250	1,340	970	760	670
11.....	1,150	3,990	6,250	2,530	3,160	5,570	3,630	6,250	1,480	970	760	670
12.....	1,150	2,290	11,400	2,530	3,390	5,570	3,630	4,950	1,480	970	760	670
13.....	1,150	2,110	17,600	2,330	3,630	5,900	3,390	4,400	1,340	970	760	670
14.....	1,150	2,110	12,400	2,330	4,400	6,250	3,630	3,630	1,340	970	760	760
15.....	1,150	1,790	8,640	2,140	4,670	6,250	2,940	3,160	1,340	970	760	760
16.....	1,150	1,650	6,610	2,140	3,880	5,900	2,940	2,940	1,480	970	760	670
17.....	1,150	1,510	5,570	1,960	3,630	5,570	2,940	2,730	1,480	860	670	760
18.....	1,150	1,940	4,950	1,960	5,570	5,250	2,940	2,530	1,340	860	670	760
19.....	1,150	7,080	4,400	3,630	10,900	5,570	3,160	2,330	1,340	860	670	760
20.....	1,260	31,200	4,140	3,160	8,640	5,250	3,880	2,140	1,340	860	670	970
21.....	1,380	15,800	3,630	2,940	6,990	4,400	3,880	2,140	1,480	860	670	1,090
22.....	1,380	44,500	3,630	4,140	5,900	4,670	3,390	2,140	1,480	860	670	860
23.....	1,380	122,000	3,390	8,640	5,900	6,610	3,390	1,960	1,630	860	670	760
24.....	1,260	54,700	2,940	6,990	6,250	5,250	3,630	2,140	1,480	860	670	670
25.....	1,260	21,900	2,940	4,950	13,400	4,670	3,880	2,330	1,340	860	670	670
26.....	1,150	13,400	2,730	4,950	10,900	4,400	3,880	2,140	1,210	860	670	670
27.....	1,150	9,980	2,530	7,390	10,900	3,880	3,630	2,140	1,210	860	670	670
28.....	1,150	9,520	2,330	13,400	21,100	3,630	3,160	1,960	1,210	760	670	670
29.....	1,260	8,640	2,330	9,520	.....	3,390	2,730	1,960	1,210	760	670	670
30.....	1,260	13,400	2,330	7,800	.....	3,160	2,730	1,960	1,090	760	670	670
31.....	2,480	.....	5,570	6,990	.....	2,940	.....	1,960	.....	760	670	.....

NOTE.—Daily discharge determined from rating curves, as follows: Sept. 17, 1905, to Feb. 2, 1907, well defined between 700 and 6,000 second-feet; Feb. 3, 1907, to Nov. 23, 1909, well defined between 900 and 40,000 second-feet for 1908, but somewhat uncertain at low water for 1907 and 1909; Nov. 24, 1909, to Sept. 30, 1910, well defined between 700 and 1,500 second-feet, and fairly well defined above 1,500 second-feet. Discharge estimated or interpolated Aug. 7-14, 1906, Apr. 16-20, June 23, and Oct. 10-16, 1909.

Monthly discharge of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910.

[Drainage area, 1,450 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905. September 16-30.....	1,380	730	868	0.599	0.33	25,800	A.
1905-6.							
October.....	3,520	880	1,580	1.09	1.26	97,200	A.
November.....	3,520	880	1,430	.986	1.10	85,100	A.
December.....	6,340	1,790	3,360	2.32	2.68	207,000	A.
January.....	16,400	3,300	6,720	4.63	5.34	413,000	A.
February.....	12,200	2,870	6,290	4.34	4.52	349,000	A.
March.....	7,420	2,870	4,610	3.18	3.67	283,000	B.
April.....	8,190	3,080	4,430	3.06	3.41	264,000	B.
May.....	13,200	3,080	4,760	3.28	3.78	293,000	C.
June.....	7,800	2,670	5,240	3.61	4.03	312,000	C.
July.....	2,480	1,050	1,530	1.06	1.22	94,100	B.
August.....	1,150	800	969	.668	.77	59,600	B.
September.....	2,110	880	1,040	.717	.80	61,900	A.
The year.....	16,400	800	3,500	2.41	32.58	2,520,000	

Monthly discharge of Middle Fork of Willamette River at Jasper, Oreg., for 1905-1910—
Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	*Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906-7.							
October.....	3,080	880	1,310	0.903	1.04	80,600	A.
November.....	15,300	1,050	5,710	3.94	4.40	340,000	A.
December.....	13,200	1,940	5,670	3.91	4.51	349,000	A.
January.....	46,500	2,870	8,870	6.12	7.06	545,000	A.
February.....	93,500	3,300	17,400	12.0	12.50	966,000	B.
March.....	14,700	2,110	4,470	3.08	3.55	275,000	B.
April.....	46,000	2,480	8,250	5.69	6.35	491,000	B.
May.....	3,080	1,790	2,280	1.57	1.81	140,000	B.
June.....	2,670	1,260	1,740	1.20	1.34	104,000	B.
July.....	1,650	730	958	.661	.76	58,900	C.
August.....	880	590	670	.462	.53	41,200	C.
September.....	730	530	578	.399	.45	34,400	C.
The year.....	93,500	530	4,820	3.32	44.30	3,430,000	
1907-8.							
October.....	800	530	574	.396	.46	35,300	C.
November.....	14,200	530	2,320	1.60	1.78	138,000	C.
December.....	84,800	1,380	14,000	9.66	11.14	861,000	C.
January.....	12,000	2,870	6,090	4.20	4.84	374,000	A.
February.....	6,340	2,670	3,530	2.43	2.62	203,000	A.
March.....	19,500	2,480	5,630	3.88	4.47	346,000	A.
April.....	7,080	3,080	4,560	3.14	3.50	271,000	A.
May.....	7,480	3,300	4,440	3.06	3.53	273,000	A.
June.....	6,000	3,080	3,900	2.69	3.00	232,000	A.
July.....	3,080	1,380	1,930	1.33	1.53	119,000	A.
August.....	1,380	1,050	1,190	.821	.95	73,200	A.
September.....	1,150	960	1,030	.710	.79	61,300	A.
The year.....	84,800	530	4,100	2.83	38.61	2,990,000	
1908-9.							
October.....	12,000	880	2,410	1.66	1.91	148,000	A.
November.....	6,700	1,380	2,850	1.97	2.20	170,000	A.
December.....	9,650	1,510	2,870	1.98	2.28	176,000	A.
January.....	40,400	3,750	14,400	9.93	11.45	855,000	A.
February.....	18,200	3,300	7,320	5.05	5.26	407,000	A.
March.....	9,650	2,480	4,770	3.29	3.79	293,000	A.
April.....	3,990	2,110	2,890	1.99	2.22	172,000	B.
May.....	6,340	1,940	2,970	2.05	2.36	183,000	B.
June.....	6,700	1,650	3,030	2.09	2.33	180,000	B.
July.....	3,080	1,380	1,590	1.10	1.27	97,800	B.
August.....	1,380	1,050	1,190	.821	.95	73,200	B.
September.....	1,380	1,150	1,170	.807	.90	69,600	B.
The year.....	40,400	880	3,960	2.73	36.92	2,850,000	
1909-10.							
October.....	2,480	1,150	1,250	.862	.99	76,900	B.
November.....	122,000	1,510	13,100	9.03	10.08	780,000	B.
December.....	17,600	2,330	5,870	4.05	4.67	361,000	A.
January.....	13,400	1,960	4,290	2.96	3.41	264,000	B.
February.....	21,100	2,940	6,150	4.24	4.42	342,000	B.
March.....	52,300	2,940	9,340	6.44	7.42	574,000	B.
April.....	3,880	2,730	3,400	2.34	2.61	202,000	A.
May.....	6,250	1,960	2,850	1.97	2.27	175,000	A.
June.....	1,790	1,090	1,410	.972	1.08	83,900	A.
July.....	1,090	760	927	.639	.74	57,000	A.
August.....	760	670	716	.494	.57	44,000	A.
September.....	1,090	670	718	.495	.55	42,700	A.
The year.....	122,000	670	4,170	2.88	38.81	3,000,000	

WILLAMETTE RIVER AT ALBANY, OREG.

Location.—In sec. 6, T. 11 S., R. 3 W., at the end of Broadalbin Street, about half a mile above the railroad bridge, just below the mouth of Calapooya Creek, and 7 miles above Santiam River.

Records presented.—November 24, 1878, to April 30, 1882, and January 21, 1892, to September 30, 1910, with some fragmentary records 1883 to 1888.

Drainage area.—4,860 square miles.

Gage.—Vertical staff in two sections.

Channel.—Sand and fine gravel; control practically permanent. Above gage height 17 feet water begins to flow through a slough several hundred feet to the left of the main channel.

Discharge measurements.—Made from Corvallis & Eastern Railroad bridge.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by United States Weather Bureau.

Discharge measurements of Willamette River at Albany, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905. July 20	L. R. Allen.....	<i>Feet.</i> a 1.40	<i>Sec.-ft.</i> 3,430	1907. Feb. 5	I. E. Oakes.....	<i>Feet.</i> b 27.00	<i>Sec.-ft.</i> 146,000
1906. Jan. 6	L. R. Allen.....	a 5.00	13,400	1908. Sept. 26	H. D. McGlashan.....	c. 75	2,840
Feb. 8	do.....	a 4.40	11,700	1910. July 30	R. W. Davenport.....	c. 90	3,190
Mar. 28	do.....	a 4.80	13,300				
May 9	do.....	a 3.50	9,380				
Sept. 25	do.....	a 1.50	4,360				
Sept. 5	I. E. Oakes.....	a. 80	2,960				

^a Weather Bureau observer's reading for the day.

^b Determined from curve of relation of Weather Bureau and Geological Survey gages.

^c Gage read by hydrographer at time of measurement.

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1878-79.												
1.....			2.4	1.5	4.2	13.0	10.8	4.2	7.4	2.2	0.9	0.7
2.....			2.6	1.5	3.8	12.0	9.8	4.2	6.7	2.2	.8	.6
3.....			5.6	1.4	3.5	9.9	9.5	5.1	6.5	2.1	.8	.5
4.....			9.5	1.3	3.2	9.7	8.5	5.0	6.0	2.0	.8	.5
5.....			9.2	1.3	3.1	10.4	7.7	4.5	5.7	2.0	.8	.4
6.....			7.3	1.2	3.0	10.6	7.4	4.3	5.2	2.3	.8	.4
7.....			6.5	1.2	2.9	12.0	7.0	4.4	5.1	2.2	.7	.4
8.....			7.2	1.3	3.5	13.0	6.6	4.6	5.1	2.0	.7	.3
9.....			6.5	1.5	4.5	12.5	6.5	5.0	4.8	1.9	.6	.3
10.....			7.0	2.8	6.0	12.8	6.2	5.5	4.5	1.8	.6	.5
11.....			8.0	3.8	7.5	13.5	7.2	6.0	4.3	1.8	.5	.6
12.....			7.0	4.5	10.0	14.4	7.2	6.2	4.5	1.8	.5	.7
13.....			6.0	4.0	13.5	14.1	7.0	6.5	4.2	2.2	.5	.6
14.....			6.0	3.8	14.5	11.8	7.1	6.5	4.0	2.0	.5	.5
15.....			5.7	4.1	12.5	11.6	8.6	6.4	3.9	1.8	.4	.4
16.....			4.0	3.8	12.5	9.8	9.3	6.2	3.7	1.8	.4	.4
17.....			3.7	3.7	11.2	8.8	8.5	6.0	3.5	1.7	.4	.4
18.....			3.7	4.0	9.5	8.0	7.7	5.6	3.2	1.6	.4	.4
19.....			3.2	4.2	8.8	7.5	7.0	6.0	3.0	1.5	.4	.3
20.....			3.0	4.0	11.3	7.7	6.5	7.5	2.9	1.5	.4	.3
21.....			2.7	4.0	12.6	7.5	6.3	8.8	2.8	1.5	.4	.2
22.....			2.5	5.0	13.0	7.2	6.0	7.8	2.7	1.4	.7	.2
23.....			2.5	7.5	12.0	7.2	5.5	7.8	2.8	1.3	.9	.2
24.....		5.2	2.4	10.5	9.5	7.7	5.8	7.8	3.2	1.2	.9	.2
25.....		4.0	2.2	13.7	9.7	10.7	5.2	7.0	3.0	1.2	.9	.2
26.....	3.5	2.2	11.5	10.5	15.2	5.1	6.5	2.8	1.2	.7	.7	.2
27.....	3.2	1.9	9.2	9.8	19.2	4.8	7.5	2.7	1.2	.8	.2	.2
28.....	2.7	1.9	7.6	11.5	22.6	4.4	10.1	2.6	1.1	.8	.3	.3
29.....	2.6	1.8	6.3	.....	18.5	4.3	10.0	2.4	1.0	.9	.9	1.0
30.....	2.5	1.7	5.4	.....	14.2	4.2	9.5	2.3	1.0	1.0	1.0	1.5
31.....		1.6	4.7	.....	12.1	.....	8.5	.....	1.0	.....	.....	.....

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879-80.												
1.....	1.2	1.0	3.2	7.1	6.0	5.0	5.5	.....	.....	.....	.....	.....
2.....	1.3	.9	4.5	11.5	5.2	5.4	6.0	.....	.....	.....	.....	.....
3.....	1.4	.9	8.5	18.0	5.0	6.0	6.4	.....	.....	.....	.....	.....
4.....	1.2	.9	13.0	23.0	4.5	6.0	9.0	.....	.....	.....	.....	.....
5.....	1.0	.8	14.0	19.5	4.5	5.8	8.6	.....	.....	.....	.....	.....
6.....	1.1	1.0	18.0	18.5	4.2	5.5	7.3	.....	.....	.....	.....	.....
7.....	1.4	5.5	23.5	21.0	4.0	5.5	6.5	.....	.....	.....	.....	.....
8.....	1.8	5.6	20.0	21.2	3.9	5.5	6.5	.....	.....	.....	.....	.....
9.....	1.8	4.0	14.0	19.5	3.7	5.3	6.2	.....	.....	.....	.....	.....
10.....	1.5	4.0	11.0	16.5	3.5	5.2	8.3	.....	.....	.....	.....	.....
11.....	2.0	4.0	9.5	14.0	3.5	4.9	10.0	.....	.....	.....	.....	.....
12.....	2.5	6.5	10.0	11.6	3.5	4.5	9.3	.....	.....	.....	.....	.....
13.....	2.5	7.5	12.5	10.7	3.8	4.3	8.5	.....	.....	.....	.....	.....
14.....	2.2	7.0	13.0	11.2	4.2	4.0	8.8	.....	.....	.....	.....	.....
15.....	2.0	10.2	13.5	12.2	8.5	3.8	7.2	.....	.....	.....	.....	.....
16.....	2.2	11.0	12.5	11.8	12.9	3.5	7.8	.....	.....	.....	.....	.....
17.....	2.5	10.0	11.0	10.8	12.0	3.5	8.5	.....	.....	.....	.....	.....
18.....	2.2	8.0	10.0	10.0	9.7	3.2	7.8	.....	.....	.....	.....	.....
19.....	1.8	6.5	8.5	9.5	8.7	3.2	7.2	.....	.....	.....	.....	.....
20.....	1.6	5.5	7.5	8.8	7.5	3.2	7.0	.....	.....	.....	.....	.....
21.....	1.5	5.0	6.7	8.2	6.2	3.0	7.5	.....	.....	.....	.....	.....
22.....	1.3	4.5	6.0	8.5	5.5	3.0	7.2	.....	.....	.....	.....	.....
23.....	1.2	4.0	5.5	9.0	5.5	3.2	7.4	.....	.....	.....	.....	.....
24.....	1.2	4.0	4.8	11.2	5.2	3.5	7.1	.....	.....	.....	.....	.....
25.....	1.2	4.0	4.5	11.2	5.5	4.0	6.7	.....	.....	.....	.....	.....
26.....	1.5	3.5	4.2	12.5	5.5	4.2	7.5	.....	.....	.....	.....	.....
27.....	1.3	3.5	4.5	11.0	5.8	5.5	6.2	.....	.....	.....	.....	.....
28.....	1.2	3.0	5.5	10.5	5.4	5.5	6.5	.....	.....	.....	.....	.....
29.....	1.1	3.0	6.2	8.2	5.0	5.4	7.1	.....	.....	.....	.....	.....
30.....	1.1	3.0	5.5	7.2	.....	5.2	8.0	.....	.....	.....	.....	.....
31.....	1.0	.....	5.2	6.5	.....	5.4	.....	.....	.....	.....	.....	.....

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.				
1880-81.																	
1.....	0.8	14.2	7.5	16.2	5.5	1880-81.						
2.....	1.0	14.2	11.5	19.5	5.5	.....	16.....	1.5	7.8	30.5	9.5	6.2	3.7			
3.....	1.4	11.5	19.3	17.5	5.4	.....	17.....	1.3	7.8	25.0	8.5	6.0	3.8			
4.....	1.5	9.0	26.8	13.5	5.2	.....	18.....	1.2	6.4	18.7	7.8	5.5	4.0			
5.....	1.5	7.7	27.7	11.7	5.0	.....	19.....	1.2	5.4	13.5	7.0	5.2	4.0			
6.....	.....	1.8	6.8	23.8	10.6	4.8	20.....	1.2	4.5	11.3	6.7	5.2	4.0			
7.....	.....	2.5	6.0	20.8	10.0	4.7	21.....	1.2	4.0	9.5	7.5	5.5	3.8			
8.....	.....	3.0	5.3	18.5	9.0	4.5	22.....	1.0	3.5	8.5	7.0	5.8	3.5			
9.....	.....	2.6	4.8	17.0	8.0	4.2	23.....	.8	3.3	7.5	6.5	6.0	3.8			
10.....	.....	2.8	4.5	14.0	7.5	4.0	24.....	.8	4.0	6.8	6.0	6.0	4.0			
11.....	.....	3.5	8.0	11.8	7.0	3.8	25.....	.8	4.0	6.2	6.0	6.0	4.0			
12.....	.....	9.0	16.0	10.7	7.0	4.1	26.....	.7	6.0	5.8	7.0	6.0	3.9			
13.....	.....	8.8	25.0	11.0	7.2	4.5	27.....	.7	7.8	5.5	8.8	6.2	4.2			
14.....	1.6	8.4	32.5	12.5	7.0	4.0	28.....	.6	8.2	5.6	12.5	6.2	4.2				
15.....	1.5	7.2	27.7	11.2	6.5	3.5	29.....	.6	10.5	7.5	.....	6.0	4.0			
.....	.....	.....	.....	.....	.....	.....	30.....	.....	12.5	8.0	.....	5.8	3.8
.....	.....	.....	.....	.....	.....	.....	31.....	.....	14.3	7.0	.....	5.5	.....			

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.				
1881-82.																	
1.....	15.4	4.0	9.0	5.0	18.3	8.6	1881-82.						
2.....	14.0	3.7	9.5	4.6	23.2	9.0	16.....	11.2	6.7	5.5	5.7	5.0	6.5				
3.....	9.5	3.2	9.8	4.4	21.0	8.8	17.....	10.7	6.3	5.0	6.2	5.4	6.2				
4.....	8.0	3.2	10.0	4.2	14.2	8.4	18.....	9.5	5.6	4.7	5.7	6.2	5.8				
5.....	7.0	3.7	10.3	4.2	11.0	8.1	19.....	8.3	5.5	4.5	5.0	6.9	5.5				
6.....	.....	8.0	4.2	11.7	4.2	9.2	20.....	7.0	5.5	4.2	4.5	6.4	8.5			
7.....	.....	9.4	4.5	15.0	4.2	8.0	21.....	6.5	5.2	4.0	4.5	5.6	8.7			
8.....	.....	11.4	4.8	14.2	4.7	7.2	22.....	6.2	4.8	4.0	4.3	5.2	8.2			
9.....	.....	10.4	4.9	11.4	6.8	6.6	23.....	5.8	4.5	4.4	4.5	5.2	10.8			
10.....	.....	9.0	4.9	9.8	9.5	6.0	24.....	5.4	4.8	4.8	5.3	5.7	12.0			
11.....	.....	7.4	6.1	9.0	10.3	5.5	25.....	5.1	6.0	4.8	5.5	6.6	11.0			
12.....	.....	6.6	8.1	8.2	8.6	5.2	26.....	4.8	6.9	5.2	7.2	7.4	9.8			
13.....	.....	6.3	8.1	7.2	7.5	4.9	27.....	5.0	8.2	5.2	10.4	7.4	9.2			
14.....	.....	6.5	7.3	6.5	6.5	4.6	28.....	4.3	13.5	5.0	14.2	8.1	8.6			
15.....	.....	8.0	6.8	6.0	5.8	4.7	29.....	4.3	15.4	4.5	.....	9.0	8.3		
.....	.....	.....	.....	.....	.....	.....	30.....	4.2	12.3	4.2	.....	9.2	8.7
.....	.....	.....	.....	.....	.....	.....	31.....	.....	10.0	4.5	.....	8.2	.....			

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1883-84.							1883-84.						
1	2.2	5.8	7.8	3.8	7.0	4.0	16	1.1	1.4	5.5	2.5	6.0	6.5
2	1.7	5.2	6.8	3.5	6.5	3.8	17	1.0	1.2	5.2	3.1	6.0	6.2
3	1.5	4.5	6.1	3.5	6.2	3.9	18	1.0	1.1	4.7	4.8	5.8	5.9
4	1.4	4.2	6.1	4.2	5.8	4.3	19	1.0	1.6	4.2	4.7	5.5	5.4
5	1.3	3.8	7.2	4.5	5.5	4.2	20	1.0	1.4	3.9	7.2	5.8	5.2
6	1.3	3.3	7.8	4.0	5.2	4.1	21	1.0	1.4	3.7	15.5	5.7	5.1
7	1.2	3.2	7.9	3.7	5.2	4.0	22	2.8	1.4	3.4	18.0	5.6	5.2
8	1.2	3.1	8.8	3.2	5.0	4.2	23	5.3	2.2	3.2	20.1	6.0	6.0
9	1.2	2.8	12.0	3.0	4.8	4.4	24	7.0	3.0	3.1	15.5	6.0	6.2
10	1.2	2.5	13.2	3.0	5.2	4.6	25	10.8	5.2	3.1	12.6	5.7	7.0
11	1.2	2.2	11.5	2.8	6.4	4.7	26	9.1	12.2	3.1	11.5	5.5	7.4
12	1.1	2.1	9.4	2.4	6.0	5.5	27	6.8	18.0	3.5	10.0	5.3	7.4
13	1.1	2.0	8.0	2.0	6.2	5.2	28	7.6	17.8	3.7	8.6	5.2	7.2
14	1.1	1.8	7.1	1.7	6.4	5.3	29	7.2	16.0	4.2	7.5	4.9	7.4
15	1.1	1.7	6.2	2.1	6.2	6.5	30	6.7	12.2	4.6	-----	4.4	7.2
							31	-----	9.7	4.2	-----	4.2	-----
Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1884-85.							1884-85.						
1	-----	1.8	-----	4.2	8.0	3.0	16	2.8	6.5	-----	16.2	4.1	2.8
2	-----	1.9	-----	4.3	7.3	2.9	17	2.7	10.5	-----	13.9	3.9	3.0
3	-----	2.0	-----	6.0	6.5	2.9	18	2.6	12.6	-----	13.2	3.8	3.2
4	-----	1.8	-----	7.1	6.0	2.8	19	2.6	15.0	-----	14.3	3.7	3.3
5	-----	1.8	-----	13.6	5.4	2.8	20	2.5	17.8	-----	13.9	3.7	3.0
6	-----	1.7	-----	14.3	4.7	2.8	21	2.5	19.5	-----	14.2	3.6	2.7
7	-----	1.5	-----	16.0	4.0	2.7	22	2.4	16.5	-----	12.9	3.6	2.4
8	-----	1.4	-----	14.2	3.8	2.7	23	2.3	12.5	-----	10.9	3.6	2.2
9	-----	1.3	-----	12.0	3.7	2.6	24	2.2	14.2	-----	9.5	3.5	2.2
10	-----	1.3	-----	10.5	3.6	2.5	25	2.2	13.4	-----	8.0	3.5	2.1
11	-----	1.3	-----	12.0	4.0	2.4	26	2.2	10.6	-----	8.0	3.5	2.0
12	-----	1.2	-----	13.2	4.0	2.4	27	2.0	10.0	-----	8.7	3.4	1.9
13	-----	1.2	-----	12.2	4.2	2.3	28	2.0	9.0	-----	9.4	3.3	1.8
14	-----	3.2	1.5	11.0	4.4	2.5	30	1.8	8.4	-----	-----	3.2	1.7
15	-----	3.0	1.8	14.1	4.2	2.6	31	-----	6.7	-----	-----	3.1	1.6
Day.	Mar.	Apr.	Day.	Mar.	Apr.	Day.	Mar.	Apr.					
1886.			1886.			1886.							
1	-----	5.0	11	-----	5.9	21	-----	6.8					
2	-----	5.3	12	-----	6.0	22	-----	6.6					
3	-----	5.9	13	-----	5.6	23	-----	5.0					
4	-----	5.9	14	-----	5.1	24	-----	4.8					
5	-----	5.5	15	-----	4.8	25	-----	4.5					
6	-----	5.1	16	-----	5.6	26	-----	4.3					
7	-----	4.8	17	-----	8.0	27	-----	4.2					
8	-----	4.9	18	-----	11.1	28	-----	4.1					
9	-----	4.9	19	-----	9.3	29	-----	3.9					
10	-----	5.1	20	-----	7.8	30	-----	3.8					
						31	-----	5.1					
Day.	Nov.	Dec.	Jan.	Feb.	Day.	Nov.	Dec.	Jan.	Feb.				
1886-87.					1886-87.								
1	-----	-----	1.7	-----	16	0.7	-----	-----	4.8				
2	-----	-----	1.5	-----	17	.8	-----	-----	4.7				
3	-----	-----	1.5	-----	18	.8	-----	-----	4.8				
4	-----	-----	1.6	-----	19	.8	-----	-----	4.7				
5	-----	-----	1.6	-----	20	.9	-----	-----	4.7				
6	-----	-----	1.5	-----	21	2.0	-----	-----	4.8				
7	-----	-----	1.4	-----	22	2.8	-----	-----	4.7				
8	-----	-----	1.6	-----	23	2.3	-----	-----	4.7				
9	-----	-----	7.9	-----	24	2.2	-----	-----	5.0				
10	-----	-----	9.3	-----	25	2.7	-----	-----	5.4				
11	-----	-----	7.3	-----	26	3.0	-----	-----	5.1				
12	-----	-----	7.6	-----	27	2.9	-----	-----	4.8				
13	-----	-----	8.7	-----	28	2.5	-----	-----	5.0				
14	-----	-----	7.2	-----	29	2.2	-----	-----	-----				
15	-----	0.7	6.0	-----	30	1.9	-----	-----	-----				
				5.0	31	-----	-----	-----	-----				

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
1887-88.							1887-88.						
1		1.1			3.5	4.6	16	3.7			7.5	4.1	3.7
2		1.1			3.4	6.0	17	3.5			6.5	3.8	4.0
3		1.3			3.3	5.9	18	2.8			6.0	3.6	3.9
4		1.8			3.2	5.6	19	2.5			5.7	3.6	3.7
5		1.9			3.2	5.9	20	3.0			5.3	3.4	3.7
6		5.0			3.3	5.7	21	1.8			5.1	3.3	3.9
7		9.1			3.5	5.2	22	1.6			4.9	3.1	3.9
8		14.3			3.5	4.8	23	1.5			4.6	3.0	3.8
9		11.8			3.4	4.5	24	1.3			4.4	2.9	3.7
10		10.0			3.3	4.2	25	1.2			4.1	2.8	3.7
11		10.1			3.2	3.9	26	1.1			3.9	2.7	3.6
12		9.0			3.3	3.6	27	1.0			3.7	2.6	3.3
13		11.3			3.7	3.4	28	1.0			3.6	2.5	3.1
14		10.3			4.1	3.3	29	1.0			3.6	2.6	3.0
15	2.8	8.1		8.6	4.3	3.4	30	1.0			3.2	3.0	
							31				3.7		

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1892.							1892.						
1		5.8	6.0	6.7	6.0	5.0	16		4.0	5.4	7.6	5.3	3.8
2		5.5	5.8	7.0	5.9	4.8	17		3.8	5.4	7.0	5.4	3.8
3		5.1	5.5	7.2	5.9	4.6	18		3.7	5.4	6.6	5.6	3.7
4		4.8	5.3	7.6	5.5	4.4	19		3.7	5.3	6.0	5.8	3.7
5		4.5	5.0	7.8	5.2	4.2	20		3.9	5.3	5.9	6.0	3.7
6		4.4	4.8	7.5	5.0	4.0	21	5.8	4.2	5.3	5.8	6.3	3.6
7		4.2	4.6	7.7	5.3	4.0	22	5.5	5.4	5.3	6.0	6.7	3.6
8		4.0	4.5	7.5	5.1	3.9	23	5.3	6.0	5.2	6.2	6.9	3.5
9		3.9	4.4	7.5	5.4	3.8	24	5.2	5.8	5.1	6.5	6.8	3.4
10		3.8	4.6	8.0	5.4	3.7	25	5.0	5.6	5.0	6.7	6.6	3.2
11		3.9	4.8	8.5	5.5	3.6	26	5.0	5.4	4.9	7.0	6.4	3.1
12		4.7	4.9	8.3	5.5	3.7	27	5.0	5.2	4.9	6.8	6.2	3.0
13		4.5	4.9	8.1	5.5	3.8	28	5.2	5.0	5.0	6.5	6.0	2.8
14		4.3	5.0	7.0	5.4	3.8	29	5.5	4.8	6.7	6.4	5.8	2.7
15		4.2	5.4	6.9	5.3	3.9	30	5.8		6.9	6.2	5.6	2.5
							31	6.2		7.1		5.4	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1892-93.												
1		0.8	5.0	10.1	2.6	7.0	8.3	6.6	5.6	3.3	1.6	0.9
2		.8	5.1	8.2	2.6	6.5	7.9	7.8	5.4	3.2	1.6	.9
3		.8	4.8	7.3	2.7	5.8	7.5	8.0	5.4	3.1	1.5	.9
4		.8	4.3	6.7	3.8	5.7	8.7	8.5	5.5	3.0	1.5	.8
5		.8	4.1	6.0	5.4	5.6	10.2	8.5	5.6	2.9	1.4	.8
6		.8	3.8	5.5	7.0	5.5	12.0	8.5	5.7	2.9	1.4	.8
7		.8	3.6	5.0	6.4	5.3	12.8	8.3	5.6	2.8	1.3	.9
8		.8	3.3	4.7	5.8	5.2	12.0	8.2	5.6	2.7	1.3	.9
9		.8	3.0	4.5	6.2	5.2	10.4	9.4	5.5	2.7	1.2	.9
10		.9	2.8	4.4	6.6	5.2	9.4	8.8	5.5	2.7	1.2	1.0
11		1.0	2.7	4.2	7.5	5.3	8.8	8.2	5.5	2.7	1.1	1.1
12		1.2	2.6	3.9	11.4	5.4	8.8	7.8	5.3	2.6	1.1	1.1
13		1.6	2.4	3.8	16.1	5.5	8.7	7.8	5.1	2.6	1.0	1.1
14		1.8	2.3	3.9	17.4	5.3	8.3	7.8	4.8	2.4	1.0	1.0
15		2.0	2.2	4.0	12.8	5.2	8.0	8.0	4.5	2.4	1.0	1.0
16		2.4	2.1	4.0	9.5	5.0	7.6	8.0	4.4	2.3	1.0	1.0
17		2.2	2.0	4.1	9.0	5.2	7.2	8.2	4.4	2.3	1.0	1.0
18		2.0	2.0	4.1	8.0	5.5	6.8	8.5	4.3	2.2	1.0	1.0
19		1.9	2.0	3.8	8.6	7.5	6.5	8.6	4.1	2.2	1.0	1.1
20		1.8	2.0	3.7	9.2	7.3	6.2	8.4	4.0	2.1	1.0	1.2
21		2.1	2.0	3.5	9.0	7.0	7.3	8.2	3.8	2.1	1.0	1.4
22		2.7	2.6	3.2	8.4	6.8	8.8	8.0	3.7	2.0	.9	1.8
23		5.6	3.0	3.1	8.0	6.5	9.1	7.5	3.6	2.0	.9	2.1
24		8.8	7.3	3.0	7.8	6.3	9.5	7.1	3.6	1.9	.9	2.0
25		6.6	9.2	2.9	7.7	6.1	8.5	6.3	3.7	1.9	.9	1.8
26		5.6	12.5	2.7	7.6	6.7	8.0	6.0	3.7	1.8	.9	1.6
27		5.0	16.0	2.7	7.5	6.5	7.4	5.5	3.6	1.8	.9	1.6
28		4.6	17.4	2.7	7.4	7.0	7.2	5.3	3.5	1.7	.8	1.5
29		4.3	15.7	2.7		7.7	7.0	5.5	3.4	1.7	.8	1.5
30		4.7	14.5	2.7		8.0	6.5	5.7	3.3	1.6	.8	1.4
31			12.2	2.7		8.6		5.8		1.6	.8	

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1893-94.												
1.....	2.1	2.5	.....	5.6	10.3	9.8	12.0	7.5	8.0	4.4	2.0	1.4
2.....	2.8	2.5	.....	8.8	9.2	10.0	10.4	7.0	8.0	4.4	2.0	1.4
3.....	2.4	2.5	.....	9.5	8.2	9.4	9.3	6.4	8.0	4.4	2.0	1.4
4.....	2.0	2.7	.....	8.2	7.6	8.8	8.9	6.4	9.2	4.3	2.1	1.4
5.....	3.1	3.0	.....	7.5	7.0	8.4	8.5	6.5	10.6	4.3	2.1	1.4
6.....	4.8	5.1	.....	7.0	6.5	8.0	8.0	6.5	9.9	4.2	2.0	1.4
7.....	5.1	8.5	.....	7.5	6.5	9.5	8.0	6.5	8.5	4.1	2.0	1.4
8.....	6.6	8.0	.....	8.0	9.6	9.7	8.3	6.6	7.6	4.0	1.9	1.4
9.....	10.3	7.1	.....	8.0	11.6	10.5	8.8	6.5	7.4	3.9	1.9	1.4
10.....	14.4	7.0	.....	8.0	10.5	12.2	8.3	6.5	7.2	3.7	1.9	1.4
11.....	15.0	6.5	.....	11.3	9.6	12.0	9.5	6.4	8.2	3.5	1.9	1.4
12.....	10.5	6.0	.....	12.8	8.5	13.0	9.0	6.4	8.0	3.4	1.8	1.4
13.....	9.2	5.5	.....	12.5	8.2	16.5	8.5	6.4	7.7	3.3	1.8	1.5
14.....	8.0	5.0	.....	16.0	7.5	20.0	8.0	6.4	7.2	3.2	1.7	1.6
15.....	7.1	4.5	.....	24.0	7.3	20.4	8.4	6.3	6.8	3.2	1.7	1.7
16.....	6.2	4.1	.....	28.2	8.0	19.4	8.2	6.2	6.4	3.2	1.7	1.6
17.....	5.7	3.8	.....	25.5	8.5	22.0	7.5	6.1	6.5	3.1	1.7	1.5
18.....	5.4	3.6	.....	19.3	9.7	24.4	7.0	5.7	6.8	3.0	1.6	1.5
19.....	5.0	3.4	.....	15.0	9.8	19.7	6.5	5.3	8.0	2.9	1.6	1.5
20.....	4.6	3.2	.....	13.5	9.5	17.4	6.5	5.7	7.6	2.8	1.6	1.4
21.....	4.2	3.0	.....	14.0	9.0	14.4	6.6	6.0	7.0	2.7	1.6	1.4
22.....	4.0	3.1	.....	17.8	8.0	11.6	7.0	6.8	6.6	2.6	1.6	1.4
23.....	3.9	3.2	.....	21.4	7.0	10.3	7.5	6.8	6.2	2.5	1.5	1.3
24.....	3.8	5.2	.....	21.0	6.5	9.4	7.5	7.6	5.8	2.5	1.5	1.3
25.....	3.5	7.3	.....	17.0	6.2	9.2	7.4	7.9	5.5	2.5	1.5	1.3
26.....	3.3	8.1	.....	14.0	6.0	9.0	7.5	8.5	5.2	2.5	1.5	1.3
27.....	3.1	3.8	.....	12.2	6.9	9.5	7.6	9.7	5.0	2.4	1.5	1.4
28.....	3.0	11.0	.....	11.0	8.0	10.5	7.7	9.5	4.8	2.3	1.5	1.6
29.....	2.9	13.9	.....	10.0	.....	11.6	7.6	8.8	4.6	2.2	1.5	1.8
30.....	2.7	19.9	.....	9.7	.....	14.0	7.5	7.8	4.5	2.1	1.4	1.7
31.....	2.5	.....	.....	10.4	.....	14.3	.....	7.5	.....	2.0	1.4	.....
1895.												
1.....	.....	.....	.....	4.0	3.8	5.0	7.2	4.8	6.0	2.0	1.0	.8
2.....	.....	.....	.....	4.4	3.6	4.6	6.9	4.5	5.7	2.0	1.0	.8
3.....	.....	.....	.....	9.4	3.5	4.5	6.7	5.0	5.4	2.0	1.0	.8
4.....	.....	.....	.....	5.6	3.4	4.3	6.5	5.5	5.2	2.0	1.0	.8
5.....	.....	.....	.....	17.5	3.4	4.0	7.1	7.0	5.0	2.0	1.0	.8
6.....	.....	.....	.....	16.3	3.3	3.7	6.5	10.4	4.6	1.9	.9	.8
7.....	.....	.....	.....	14.4	3.2	3.5	6.3	11.3	4.2	1.9	.9	.8
8.....	.....	.....	.....	11.4	3.1	3.5	6.2	9.2	4.0	1.9	.9	.8
9.....	.....	.....	.....	10.0	3.0	3.5	6.1	8.4	3.7	1.8	.9	.8
10.....	.....	.....	.....	10.5	3.0	3.4	6.0	7.5	3.5	1.8	.9	.9
11.....	.....	.....	.....	10.6	2.9	3.4	5.8	6.5	3.4	1.7	.9	.9
12.....	.....	.....	.....	11.8	2.9	3.3	5.6	6.0	3.3	1.7	.9	1.0
13.....	.....	.....	.....	16.4	3.4	3.2	5.5	5.8	3.2	1.6	.8	1.1
14.....	.....	.....	.....	18.4	3.6	3.1	5.4	5.6	3.1	1.5	.8	1.1
15.....	.....	.....	.....	18.0	3.8	3.0	5.2	5.5	3.0	1.5	.8	1.2
16.....	.....	.....	.....	14.0	4.0	2.9	5.0	5.4	2.9	1.5	.8	1.2
17.....	.....	.....	.....	11.2	4.5	2.8	7.5	5.2	2.9	1.4	.8	1.1
18.....	.....	.....	.....	9.4	4.9	2.8	8.5	5.0	2.8	1.4	.8	1.1
19.....	.....	.....	.....	8.3	5.2	2.7	7.5	4.5	2.8	1.4	.8	1.0
20.....	.....	.....	.....	7.5	5.1	2.6	6.5	4.0	2.7	1.4	.8	1.0
21.....	.....	.....	.....	6.6	5.0	2.9	5.0	3.9	2.6	1.3	.8	1.0
22.....	.....	.....	.....	6.4	5.3	3.7	5.5	3.8	2.6	1.3	.8	1.0
23.....	.....	.....	.....	6.3	5.7	5.7	5.5	3.6	2.5	1.3	.8	1.0
24.....	.....	.....	.....	6.1	6.1	7.8	5.4	3.5	2.5	1.3	.8	1.0
25.....	.....	.....	.....	5.7	6.5	12.0	5.4	3.6	2.4	1.3	.8	1.0
26.....	.....	.....	.....	5.3	6.2	11.5	5.4	3.8	2.4	1.2	.8	1.0
27.....	.....	.....	.....	4.8	5.5	9.8	5.2	5.5	2.3	1.2	.8	.9
28.....	.....	.....	.....	4.5	5.2	9.2	5.1	7.0	2.2	1.1	.8	.9
29.....	.....	.....	.....	4.2	.....	9.8	5.1	7.1	2.1	1.1	.8	.9
30.....	.....	.....	.....	4.0	.....	8.8	5.1	6.5	2.0	1.1	.8	.8
31.....	.....	.....	.....	3.9	.....	7.9	.....	6.4	.....	1.0	.8	.....

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1895-96.												
1.....	0.8	0.4	2.0	9.4	7.4	15.4	6.5	6.3	7.5	4.4	1.8	1.2
2.....	.8	.4	2.9	14.0	8.0	12.7	6.4	7.5	7.0	4.3	1.8	1.5
3.....	.8	.4	3.3	14.0	8.5	10.0	6.0	10.5	6.5	4.2	1.8	1.7
4.....	.8	.4	4.6	10.4	8.0	8.5	5.7	12.5	6.3	4.1	1.7	1.6
5.....	.8	.4	3.6	8.9	7.6	7.8	5.6	15.4	6.2	4.0	1.7	1.5
6.....	.8	.4	3.0	8.0	7.5	7.5	5.4	13.8	6.0	3.9	1.6	1.4
7.....	.8	.4	3.5	8.0	7.0	7.6	5.5	11.6	5.9	3.8	1.6	1.3
8.....	.8	.4	3.7	8.4	6.7	9.0	6.0	10.6	5.8	3.7	1.5	1.2
9.....	.8	.4	3.8	9.0	6.5	10.5	6.5	9.7	5.7	3.6	1.5	1.1
10.....	.8	.4	3.4	10.0	6.3	9.0	7.0	9.1	5.6	3.5	1.4	1.0
11.....	.8	.5	3.8	9.2	5.9	8.8	8.4	9.5	5.5	3.3	1.4	1.0
12.....	.8	.5	4.4	8.1	5.5	8.6	9.9	10.5	5.4	3.1	1.3	1.0
13.....	.8	.7	4.3	7.0	5.3	8.0	11.5	11.5	5.4	3.0	1.3	1.0
14.....	.7	1.0	4.8	6.2	5.1	7.7	16.0	10.0	5.4	2.8	1.2	1.0
15.....	.7	1.6	6.0	5.6	5.0	7.5	20.8	8.8	5.3	2.7	1.2	1.0
16.....	.7	2.2	8.0	7.2	5.0	6.4	19.5	8.0	5.3	2.6	1.2	1.0
17.....	.7	1.8	7.5	13.0	5.0	5.6	14.0	8.2	5.2	2.5	1.2	1.0
18.....	.7	1.3	6.5	18.2	4.8	5.7	11.0	8.5	5.2	2.4	1.1	1.0
19.....	.7	1.2	6.0	20.8	4.5	5.8	9.6	8.3	5.1	2.3	1.1	1.0
20.....	.6	1.0	9.4	19.4	4.2	6.0	8.7	7.8	5.1	2.2	1.1	1.0
21.....	.6	1.0	16.2	18.0	4.2	6.2	7.5	7.4	5.0	2.1	1.1	1.0
22.....	.6	.9	14.4	20.6	4.3	7.3	7.3	6.8	5.0	2.0	1.0	1.0
23.....	.6	.9	10.3	25.0	4.4	8.5	6.5	7.0	5.0	2.0	1.0	1.0
24.....	.5	.9	9.1	21.4	4.5	8.0	7.2	7.2	4.9	2.0	1.0	1.0
25.....	.5	.8	8.5	15.9	4.7	8.5	7.5	7.4	4.8	2.0	1.0	1.0
26.....	.5	.8	8.0	12.5	5.0	13.9	7.5	7.4	4.7	2.0	1.0	1.0
27.....	.5	.8	7.2	10.5	8.6	11.8	7.5	7.4	4.7	1.9	1.0	1.0
28.....	.5	1.0	8.0	10.0	9.4	9.7	6.6	7.4	4.6	1.9	1.0	1.0
29.....	.5	2.5	8.4	9.5	13.0	8.6	6.5	7.5	4.5	1.8	1.0	1.0
30.....	.4	2.0	8.7	8.6	.....	8.0	6.4	7.5	4.5	1.8	1.0	1.0
31.....	.4	.....	7.5	7.9	.....	7.5	.....	7.5	.....	1.8	1.0	.....
1896-97.												
1.....	1.0	2.5	5.4	10.4	7.3	5.6	10.3	4.9	3.8	3.4	1.3	1.0
2.....	1.0	3.4	6.4	10.8	7.2	5.8	9.8	5.0	3.6	3.0	1.3	1.2
3.....	1.0	3.6	8.5	9.3	7.0	6.0	9.2	5.1	3.4	3.1	1.3	1.3
4.....	1.0	3.8	8.5	8.0	8.4	5.3	8.6	5.3	3.2	3.2	1.2	1.4
5.....	1.0	3.0	8.5	7.2	10.3	5.5	8.5	5.4	3.1	3.3	1.2	1.5
6.....	1.0	3.5	10.4	6.8	13.7	5.5	8.4	5.7	3.0	3.3	1.2	1.5
7.....	1.0	3.2	13.5	6.5	16.3	5.5	9.4	6.0	3.0	3.2	1.2	1.5
8.....	1.0	4.4	12.4	6.2	14.5	5.5	11.2	5.8	2.9	3.1	1.2	1.5
9.....	1.0	9.5	11.5	6.0	11.5	6.0	9.5	5.3	2.9	3.0	1.2	1.5
10.....	1.0	14.5	10.3	5.6	10.3	6.5	10.0	5.0	2.8	2.8	1.3	1.4
11.....	1.0	14.5	9.0	5.3	9.2	6.5	10.5	5.2	2.7	2.6	1.3	1.4
12.....	.9	11.5	9.2	5.0	11.3	6.4	10.0	5.5	2.6	2.5	1.3	1.3
13.....	.9	9.0	11.0	4.8	13.9	6.2	9.4	5.2	2.6	2.4	1.2	1.3
14.....	.9	8.0	15.5	4.6	13.2	6.0	9.4	6.0	2.6	2.3	1.2	1.3
15.....	.9	11.5	18.0	4.5	12.0	6.2	9.5	6.0	2.7	2.2	1.2	1.3
16.....	.9	18.5	15.0	4.4	15.3	6.7	9.8	6.0	2.8	2.1	1.2	1.3
17.....	.8	27.4	12.0	4.3	18.4	7.0	10.1	5.9	3.0	2.1	1.1	1.2
18.....	.8	28.5	10.2	4.2	17.0	7.4	10.4	5.8	3.1	2.0	1.1	1.2
19.....	.8	25.6	9.6	4.4	12.5	7.7	10.5	5.7	3.2	1.9	1.1	1.2
20.....	.8	18.5	8.8	4.6	10.0	8.0	10.5	5.5	3.0	1.8	1.1	1.1
21.....	.8	12.7	8.0	6.5	9.0	7.3	9.8	5.3	2.9	1.7	1.1	1.1
22.....	.8	11.8	7.2	6.5	8.0	6.5	9.0	5.1	3.1	1.6	1.1	1.1
23.....	.8	12.5	6.6	6.0	7.0	6.5	8.6	4.9	3.3	1.6	1.0	1.0
24.....	.8	11.8	6.9	5.4	6.5	7.3	8.0	4.7	3.4	1.5	1.0	1.0
25.....	.8	10.0	5.7	5.4	5.2	10.5	7.5	4.5	3.5	1.5	1.0	1.0
26.....	.8	8.5	5.2	5.4	5.0	15.2	6.5	4.3	3.5	1.5	1.0	1.0
27.....	.8	7.6	5.3	5.2	5.0	17.5	6.9	4.1	3.9	1.4	1.0	1.0
28.....	.9	6.5	5.4	5.0	5.3	14.5	7.4	3.9	4.3	1.4	1.0	1.0
29.....	1.0	6.0	5.9	5.5	.....	14.0	6.7	3.8	3.9	1.4	1.0	1.0
30.....	1.1	5.5	6.4	6.0	.....	13.8	6.0	3.9	3.5	1.4	1.0	1.0
31.....	1.3	.....	7.9	7.3	.....	11.5	.....	4.0	.....	1.3	1.0	1.0

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1897-98.												
1.....	1.0	1.0	10.4	6.5	4.0	5.5	4.0	4.0	4.0	2.0	1.0	0.7
2.....	1.0	1.0	9.4	6.0	4.0	5.5	3.8	4.0	4.5	2.0	1.0	.7
3.....	1.0	1.0	7.8	5.6	4.2	5.5	3.8	3.5	4.5	2.0	1.0	.7
4.....	1.0	1.0	6.5	5.2	5.2	5.5	3.8	3.5	4.3	1.9	.9	.7
5.....	1.0	1.2	6.3	4.8	6.0	5.3	3.8	3.3	3.9	1.9	.9	.7
6.....	1.0	1.4	8.5	4.2	6.8	5.2	3.8	3.1	3.5	1.9	.9	.7
7.....	1.0	1.8	12.4	4.2	8.4	4.6	4.5	3.0	3.3	1.9	.9	.7
8.....	1.0	2.4	15.4	4.8	10.3	4.5	4.5	3.0	3.0	1.9	.9	.7
9.....	1.0	2.2	15.5	5.0	10.0	4.5	4.8	3.0	3.0	1.8	.9	.7
10.....	1.0	3.0	15.4	5.5	8.5	4.5	5.2	2.8	3.0	1.8	.9	.7
11.....	1.0	5.5	14.1	4.8	8.0	4.0	5.5	2.8	3.0	1.7	.9	.7
12.....	1.0	6.6	14.4	4.5	7.7	4.0	5.2	3.0	3.0	1.6	.9	.7
13.....	1.0	5.5	17.4	4.0	7.5	3.8	5.0	3.0	3.0	1.4	.8	.7
14.....	1.0	7.4	16.5	4.0	7.5	3.8	5.0	3.0	2.8	1.3	.8	.7
15.....	1.0	7.8	17.2	4.2	7.5	4.0	5.0	3.0	2.0	1.1	.8	.7
16.....	1.0	6.5	17.5	5.0	7.8	4.0	5.5	3.0	2.5	1.0	.8	.7
17.....	1.0	5.5	13.5	5.2	8.0	4.0	5.2	3.0	3.0	1.0	.8	.7
18.....	1.0	6.0	11.5	5.8	7.5	3.8	5.0	3.0	3.0	1.0	.8	.7
19.....	1.0	8.2	9.5	6.0	7.0	3.6	4.5	3.0	3.0	1.0	.8	.7
20.....	1.1	10.5	8.6	8.5	7.1	3.5	4.0	3.0	3.0	1.0	.7	.8
21.....	1.2	14.2	7.0	8.8	7.2	3.5	4.0	3.0	3.0	1.0	.7	.8
22.....	1.5	12.0	7.0	8.7	7.1	3.8	4.2	3.2	2.8	1.0	.7	.9
23.....	1.7	10.1	6.2	8.5	7.0	4.0	4.3	3.5	2.8	1.0	.7	.9
24.....	1.8	9.5	6.0	7.2	6.9	4.0	4.6	3.5	2.6	1.0	.7	1.0
25.....	1.8	8.3	6.0	6.8	6.8	3.8	5.0	3.0	2.4	1.0	.7	1.0
26.....	2.5	7.0	6.5	6.0	6.5	4.0	5.0	2.8	2.2	1.0	.7	1.3
27.....	2.0	6.9	7.5	6.5	5.0	4.0	5.0	3.0	2.0	1.0	.7	1.5
28.....	1.7	5.7	7.5	6.0	5.5	3.9	5.0	2.8	2.0	1.0	.7	1.5
29.....	1.5	4.8	7.2	5.0	-----	4.0	4.5	3.0	2.0	1.0	.7	1.3
30.....	1.3	6.0	7.0	5.3	-----	4.0	4.7	3.5	2.0	1.0	.7	1.0
31.....	1.2	-----	6.7	4.5	-----	4.0	-----	3.9	-----	1.0	.7	-----
1898-99.												
1.....	1.5	1.2	12.4	6.5	6.0	14.5	7.4	8.0	7.0	5.0	2.1	2.5
2.....	2.0	1.8	13.5	6.6	6.5	21.0	5.2	8.4	7.5	5.0	2.0	2.4
3.....	1.5	2.3	14.5	8.5	6.1	23.0	6.0	8.2	8.0	5.0	2.0	2.4
4.....	1.1	2.5	12.0	8.7	5.5	19.8	6.0	7.5	7.8	5.0	1.9	2.5
5.....	1.0	3.0	9.5	8.0	5.1	15.0	7.8	7.3	7.6	5.0	1.9	2.5
6.....	1.0	2.8	8.4	7.4	4.8	12.0	7.0	7.4	7.4	4.9	1.9	2.5
7.....	1.0	2.5	7.0	7.5	4.1	10.0	7.0	7.3	7.7	4.8	1.9	2.5
8.....	1.0	2.3	6.0	7.6	5.5	9.5	7.0	6.8	6.5	4.6	1.9	2.4
9.....	1.0	2.0	5.0	7.7	10.4	9.5	7.5	6.5	6.2	4.4	1.8	2.3
10.....	1.0	1.8	5.0	7.9	16.4	9.4	7.9	7.4	6.4	4.2	1.8	2.1
11.....	1.0	1.6	4.6	9.4	18.4	8.5	8.6	7.5	6.9	4.1	1.8	2.0
12.....	1.0	1.6	4.2	10.0	15.8	8.3	8.0	7.4	7.5	4.1	1.8	2.0
13.....	1.0	1.5	4.0	9.5	12.4	8.0	9.4	7.4	7.2	4.0	1.8	1.9
14.....	1.0	1.3	3.6	8.5	10.5	8.5	9.5	6.8	6.8	4.0	1.8	1.9
15.....	1.0	1.0	3.5	8.5	9.5	8.9	8.5	6.0	6.6	4.0	1.8	1.8
16.....	1.1	1.2	3.5	8.9	9.2	10.0	8.0	5.8	6.4	4.0	1.8	1.7
17.....	1.1	1.5	4.3	14.1	8.6	10.4	7.6	5.4	6.5	4.0	1.8	1.7
18.....	1.1	3.9	4.8	14.5	8.0	9.8	7.5	5.2	6.6	3.9	1.8	1.6
19.....	1.1	11.9	5.4	13.4	8.0	8.0	7.4	5.3	6.7	3.8	1.9	1.6
20.....	1.0	16.4	6.5	13.7	8.0	8.4	7.5	5.5	6.8	3.7	1.9	1.6
21.....	1.0	13.0	8.5	14.4	7.7	8.5	7.2	5.3	6.9	3.5	2.0	1.6
22.....	1.0	9.0	9.0	16.6	7.4	9.0	7.0	5.2	6.4	3.3	2.0	1.6
23.....	1.0	8.5	7.6	16.4	6.7	8.5	6.8	5.3	5.0	3.1	2.2	1.5
24.....	1.0	9.0	6.7	13.5	6.5	7.9	6.5	5.5	5.5	3.0	2.4	1.5
25.....	1.0	10.4	5.8	11.0	6.5	11.0	6.5	5.8	5.5	2.9	2.5	1.5
26.....	1.0	8.4	5.5	9.5	7.5	10.0	6.5	6.6	5.5	2.8	2.6	1.5
27.....	1.0	7.2	4.8	8.5	8.5	9.5	6.5	7.4	5.5	2.7	2.8	1.4
28.....	1.0	6.5	4.5	7.6	10.4	8.1	7.5	7.6	5.6	2.6	3.0	1.4
29.....	1.0	9.5	5.7	6.9	-----	7.9	7.6	7.8	5.6	2.4	3.0	1.4
30.....	1.0	10.5	5.8	6.4	-----	7.8	7.8	7.5	5.5	2.3	2.8	1.4
31.....	1.0	-----	6.4	6.0	-----	7.5	-----	7.1	-----	2.2	2.7	-----

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1899-1900.												
1.....	1.5	3.0	15.5	6.5	5.6	8.4	10.2	4.0	3.3	2.4	1.4	0.7
2.....	1.6	2.9	13.5	6.6	5.5	7.5	9.0	3.9	3.2	2.3	1.4	.7
3.....	1.7	2.8	12.5	7.2	5.5	7.5	8.4	3.8	3.0	2.1	1.4	.7
4.....	1.8	2.7	10.0	7.5	5.5	7.4	7.8	3.7	3.0	2.0	1.4	.7
5.....	1.7	2.7	9.0	6.6	5.5	7.3	5.4	3.7	2.9	1.9	1.3	.7
6.....	1.6	2.6	9.0	6.5	5.2	7.0	5.0	3.8	2.9	1.9	1.3	.7
7.....	1.7	2.6	8.0	6.6	5.2	6.5	5.5	3.8	2.8	1.9	1.3	.7
8.....	1.6	2.7	7.5	6.7	5.2	8.4	6.0	4.0	2.7	1.8	1.2	.8
9.....	1.5	2.8	7.5	6.8	5.5	9.8	6.5	4.0	2.6	1.8	1.2	.9
10.....	1.4	3.1	7.0	7.0	6.6	10.5	6.0	4.1	2.5	1.8	1.2	.9
11.....	1.3	3.0	8.6	7.0	6.4	9.2	6.2	4.0	2.4	1.8	1.1	.9
12.....	1.3	3.0	14.2	8.5	6.2	8.0	5.9	3.8	2.3	1.7	1.1	.9
13.....	1.3	3.1	21.2	13.6	6.0	7.5	5.8	3.8	2.2	1.7	1.1	1.0
14.....	1.2	3.0	17.2	18.2	6.3	7.3	6.0	3.8	2.3	1.6	1.0	1.0
15.....	1.2	3.0	14.2	24.0	6.0	6.6	6.4	3.7	2.4	1.6	.9	1.0
16.....	1.2	3.0	12.5	22.5	5.7	6.3	6.8	3.7	2.5	1.5	.9	1.0
17.....	1.6	3.1	12.2	17.3	5.5	6.0	5.7	4.2	2.5	1.5	.9	1.0
18.....	2.1	3.8	11.2	16.5	5.3	6.2	5.5	4.0	2.5	1.5	.9	1.0
19.....	3.2	4.3	9.5	15.5	5.2	6.4	4.8	3.8	2.5	1.5	.9	1.0
20.....	8.6	4.8	8.5	12.9	5.5	5.2	4.5	3.6	2.5	1.5	.8	.9
21.....	11.5	6.7	7.6	10.8	6.9	6.6	4.5	3.5	2.5	1.5	.8	.9
22.....	7.5	6.5	8.4	9.6	12.0	5.9	4.4	3.5	2.5	1.5	.8	.9
23.....	6.5	6.0	9.0	8.5	16.7	5.4	4.2	3.3	2.5	1.5	.8	.9
24.....	5.7	5.4	8.2	8.5	16.0	5.4	4.2	3.3	2.5	1.5	.8	.8
25.....	5.0	4.8	7.4	8.2	12.0	5.4	4.1	3.0	2.5	1.5	.7	.8
26.....	4.8	5.0	7.3	7.9	10.4	6.0	4.0	3.5	2.4	1.5	.7	.8
27.....	4.0	6.5	6.5	7.4	10.4	6.5	4.0	4.0	2.3	1.5	.7	.7
28.....	3.7	10.0	6.4	6.0	9.0	6.4	4.0	4.3	2.2	1.4	.7	.7
29.....	3.6	13.3	5.5	6.5	.....	6.6	4.0	4.0	2.1	1.4	.7	.6
30.....	3.5	14.9	5.5	6.2	.....	8.4	4.0	3.5	2.0	1.4	.7	.6
31.....	3.3	.....	6.0	5.9	.....	11.5	.....	3.5	.....	1.4	.7	.....
1900-1901.												
1.....	.7	10.0	6.4	6.0	5.3	14.0	7.0	4.2	4.0	1.9	1.3	.8
2.....	.8	9.5	7.0	7.2	5.0	12.5	6.4	4.2	3.2	1.9	1.2	.8
3.....	.8	8.5	6.5	7.5	4.7	11.5	8.0	4.3	3.5	1.9	1.1	.8
4.....	.8	7.9	6.0	8.2	4.5	10.5	7.6	4.4	3.5	1.9	1.0	.8
5.....	.9	7.6	5.5	7.5	4.3	8.5	7.5	4.4	3.5	1.9	1.0	.8
6.....	.9	5.3	5.0	7.2	4.1	8.0	8.2	4.3	3.4	1.9	.9	.8
7.....	.9	5.4	4.5	6.0	4.0	7.5	8.7	4.3	3.4	1.9	.9	.8
8.....	.9	4.5	4.0	7.5	3.8	7.4	9.2	4.3	3.3	1.9	.9	.8
9.....	1.0	4.3	3.0	7.5	3.6	7.5	8.4	4.4	3.2	1.8	.9	.8
10.....	1.0	3.7	3.5	7.0	3.4	7.7	7.5	4.4	3.1	1.8	.8	.9
11.....	1.0	3.5	3.5	6.5	3.2	7.9	7.3	4.7	3.0	1.8	.8	.9
12.....	1.0	3.2	3.2	7.9	3.2	8.0	7.3	4.9	3.0	1.8	.8	.9
13.....	1.0	3.0	3.5	13.6	3.4	7.7	7.0	5.0	3.0	1.8	.8	.9
14.....	1.0	2.9	3.8	20.9	5.0	7.0	6.8	5.0	3.0	1.7	.8	.9
15.....	1.0	2.7	4.0	30.4	7.5	6.2	6.5	5.0	2.9	1.7	.8	1.0
16.....	1.0	2.6	5.0	28.4	11.0	6.5	6.1	4.9	2.8	1.6	.8	1.0
17.....	1.0	2.5	5.5	23.0	17.4	6.5	5.8	4.9	2.7	1.6	.8	1.0
18.....	1.0	2.7	7.4	15.8	26.0	6.4	5.7	5.0	2.6	1.5	.8	1.0
19.....	1.4	3.0	6.5	12.2	19.6	6.0	5.5	5.0	2.5	1.5	.8	1.0
20.....	1.9	2.5	6.5	10.5	14.0	5.5	5.3	5.1	2.5	1.5	.8	1.0
21.....	2.3	3.0	9.8	9.4	14.5	5.1	5.6	5.0	2.5	1.5	.8	1.1
22.....	3.0	3.0	15.8	8.5	13.5	5.3	5.9	5.0	2.5	1.4	.8	1.2
23.....	3.4	3.0	18.5	8.3	11.4	5.5	4.7	4.9	2.4	1.4	.8	1.7
24.....	4.0	3.0	14.8	8.5	11.7	5.7	4.7	4.8	2.3	1.4	.8	1.8
25.....	3.8	4.1	11.5	8.1	12.0	5.9	4.3	4.7	2.2	1.4	.8	1.8
26.....	3.5	5.2	10.5	7.5	12.4	8.4	4.5	4.6	2.1	1.3	.8	2.0
27.....	3.6	8.8	9.5	7.0	12.4	10.4	4.5	4.5	2.0	1.3	.8	2.2
28.....	3.7	8.4	8.0	6.5	13.6	10.0	4.2	4.5	2.0	1.3	.8	2.6
29.....	3.5	6.4	7.5	6.2	.....	8.9	4.0	4.5	2.0	1.3	.8	2.5
30.....	4.4	6.0	7.0	6.0	.....	8.0	4.0	4.3	1.9	1.3	.8	2.4
31.....	4.6	.....	6.4	5.6	.....	7.5	.....	4.0	.....	1.3	.8	.....

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1901-2.												
1	2.2	2.0	5.0	4.5	3.0	13.4	5.4	4.5	5.6	2.5	1.5	0.8
2	1.5	2.0	7.6	4.2	3.1	11.5	5.5	5.4	5.6	2.5	1.5	.8
3	1.5	2.0	12.4	4.2	3.3	10.3	5.6	6.0	5.5	2.7	1.5	.8
4	1.5	2.0	12.9	4.4	3.5	9.4	5.5	5.9	5.5	4.0	1.5	.8
5	1.5	1.8	13.4	4.5	4.0	10.6	5.6	5.5	5.5	6.0	1.5	.8
6	1.5	1.7	12.5	4.6	5.4	11.0	5.8	5.4	5.3	6.2	1.4	.8
7	1.5	1.5	11.4	6.4	6.6	10.1	6.0	5.8	5.0	5.5	1.4	.8
8	1.5	1.4	11.0	9.2	8.5	9.5	9.1	5.9	4.8	4.5	1.4	.8
9	1.4	1.5	10.5	10.2	10.3	8.7	12.2	6.0	4.6	4.2	1.4	.8
10	1.3	1.5	15.5	8.0	12.4	8.1	11.5	6.0	4.6	3.7	1.4	.8
11	1.2	1.5	18.4	7.9	17.0	7.5	10.0	6.1	4.5	3.5	1.3	.8
12	1.1	1.2	13.5	7.0	16.2	7.3	9.4	6.2	4.0	3.9	1.3	.8
13	1.0	1.1	10.0	6.5	14.5	7.4	8.5	5.8	4.0	4.3	1.3	.8
14	1.0	1.0	8.1	5.8	12.4	7.5	7.9	3.9	3.8	4.7	1.3	.8
15	1.0	1.3	7.0	5.5	10.4	7.5	7.1	6.0	3.7	4.7	1.3	.8
16	1.0	1.4	6.2	4.7	9.9	7.5	7.0	6.4	3.5	4.6	1.3	.8
17	1.0	1.8	5.5	4.5	9.5	7.5	7.4	6.2	3.5	4.5	1.2	.8
18	1.0	1.2	5.3	4.5	9.3	7.5	7.7	6.8	3.4	4.3	1.2	.8
19	1.0	1.2	5.1	4.4	9.6	8.5	8.0	7.5	3.3	4.2	1.2	.8
20	1.0	1.5	4.9	4.2	9.7	8.5	8.3	8.0	3.2	4.0	1.2	.8
21	1.0	1.5	4.5	4.1	8.3	8.4	8.0	8.0	3.1	3.8	1.2	.9
22	1.0	2.0	4.3	4.0	7.9	8.4	7.5	7.9	3.0	3.8	1.2	.9
23	1.0	3.5	3.9	3.8	7.5	8.2	7.0	7.7	3.0	3.6	1.1	1.0
24	1.0	9.4	4.0	3.7	7.0	8.0	-6.3	7.4	2.9	3.4	1.1	1.0
25	1.0	8.5	4.1	3.5	7.5	7.4	6.0	6.8	2.8	3.2	1.1	1.0
26	1.0	6.5	4.2	3.3	9.4	7.2	5.8	6.2	2.7	2.8	1.1	1.0
27	1.0	5.5	4.2	3.1	12.0	7.0	5.3	6.2	2.6	2.5	1.1	1.0
28	1.0	4.4	4.4	3.0	13.0	6.5	4.8	6.4	2.5	2.2	1.0	1.0
29	1.4	3.9	4.5	2.9		6.2	4.5	6.4	2.5	1.9	1.0	1.0
30	1.7	3.8	4.6	2.8		6.3	4.5	6.0	2.5	1.6	1.0	1.0
31	2.0		4.7	2.8		6.5		5.6		1.5	1.0	
1902-3.												
1	1.0	1.0	7.3	8.1	13.9	5.4	6.0	4.0	4.6	2.5	1.4	1.1
2	1.0	1.0	11.5	9.5	11.8	5.1	6.7	4.2	4.7	2.4	1.4	1.3
3	1.0	1.5	12.9	11.0	9.5	4.9	5.3	4.3	4.5	2.4	1.3	1.4
4	.8	2.4	12.5	10.5	8.3	4.7	4.9	4.4	4.2	2.4	1.3	1.5
5	.8	2.0	17.2	10.0	7.5	4.5	4.7	4.5	3.9	2.3	1.3	1.6
6	.8	1.7	24.5	9.0	7.0	4.5	4.5	4.5	3.6	2.3	1.3	1.7
7	.8	2.4	20.3	8.2	6.4	4.5	4.5	4.6	3.6	2.2	1.3	1.8
8	.8	3.1	14.5	7.5	6.9	4.5	4.7	4.5	3.6	2.2	1.3	1.9
9	.8	5.4	15.8	6.9	7.3	4.5	5.2	4.3	3.8	2.2	1.3	1.9
10	.8	7.6	17.4	6.0	7.6	4.6	5.0	4.3	3.9	2.1	1.3	2.0
11	.8	6.0	19.4	5.8	10.8	4.8	4.9	4.3	3.8	2.1	1.2	2.1
12	.8	5.9	16.0	5.5	11.4	7.4	4.6	4.4	3.8	2.0	1.2	2.3
13	.9	5.9	13.3	5.0	10.0	10.0	4.4	4.4	3.7	1.9	1.2	2.4
14	.9	4.9	11.7	4.8	9.3	8.5	4.4	4.4	3.5	1.9	1.2	2.5
15	1.0	5.5	10.0	4.7	7.9	8.5	4.0	4.5	3.2	1.9	1.1	2.3
16	1.0	6.4	8.8	4.5	6.5	8.5	3.8	4.5	3.2	1.9	1.1	2.0
17	1.0	7.5	7.7	4.3	6.0	7.4	3.7	4.5	3.2	1.9	1.1	1.6
18	1.0	11.7	6.9	4.1	5.8	6.6	3.6	4.6	3.1	1.9	1.1	1.5
19	1.0	13.1	6.2	3.9	5.6	5.8	3.5	4.5	3.0	1.8	1.0	1.4
20	1.0	14.0	5.6	4.3	5.4	5.4	3.4	4.3	2.8	1.7	1.0	1.3
21	1.0	10.5	6.0	5.0	5.2	4.9	3.3	4.2	2.7	1.7	1.0	1.2
22	1.0	8.8	6.6	11.5	6.0	4.7	3.7	4.0	2.6	1.6	1.0	1.2
23	1.0	7.5	7.0	17.5	6.6	4.5	4.0	3.9	2.6	1.6	1.2	1.2
24	1.0	6.2	7.9	18.4	6.3	4.5	4.2	3.8	2.6	1.5	1.4	1.2
25	1.0	5.5	8.8	21.8	6.5	4.6	4.3	3.7	2.5	1.5	1.6	1.1
26	1.0	5.1	8.9	31.3	6.3	4.8	4.4	3.7	2.5	1.4	1.4	1.1
27	1.0	4.8	9.3	27.0	6.0	4.8	4.5	3.7	2.4	1.4	1.5	1.0
28	1.0	4.9	8.7	20.8	5.8	4.9	4.5	4.0	2.5	1.4	1.3	1.0
29	1.0	5.0	8.0	15.6		5.7	4.5	4.1	2.6	1.4	1.2	1.0
30	1.0	5.2	7.4	13.8		6.6	4.2	4.3	2.6	1.4	1.1	1.0
31	1.0		7.0	14.1		6.3		4.4		1.4	1.0	

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	1.0	1.0	6.2	4.2	5.2	14.9	11.2	8.0	4.8	2.5	1.6	1.0
2.....	1.0	1.2	5.9	4.2	5.2	16.2	9.5	7.6	4.8	2.4	1.6	1.0
3.....	1.0	1.5	5.5	4.2	5.1	16.4	9.4	7.3	4.8	2.4	1.5	1.0
4.....	1.0	1.5	5.1	4.3	5.0	16.8	9.3	7.0	4.7	2.3	1.5	1.0
5.....	1.3	1.6	5.8	4.3	4.9	17.0	8.9	6.6	4.6	2.3	1.5	1.0
6.....	1.7	1.7	5.6	4.3	5.5	15.3	8.6	6.4	4.5	2.2	1.4	1.0
7.....	3.1	2.6	4.5	4.4	6.0	13.3	8.5	6.2	4.4	2.1	1.4	1.0
8.....	3.0	4.0	4.3	4.4	6.5	15.5	8.5	6.0	4.2	2.1	1.4	1.0
9.....	2.5	3.9	4.0	4.5	6.5	18.6	8.2	5.8	4.0	2.1	1.4	1.0
10.....	2.1	3.8	3.8	7.5	6.5	21.0	8.8	5.8	3.9	2.0	1.3	1.0
11.....	2.0	5.7	3.6	10.5	7.5	16.9	9.4	5.8	3.8	2.0	1.3	1.0
12.....	2.0	9.1	3.6	15.6	11.0	13.6	10.2	5.8	3.7	2.0	1.3	1.0
13.....	1.9	12.4	3.7	14.0	13.0	12.9	11.1	5.8	3.6	2.0	1.3	1.0
14.....	1.8	9.3	3.7	12.0	11.8	12.2	11.5	5.8	3.5	2.0	1.3	1.0
15.....	1.7	12.2	3.9	10.5	13.8	13.1	11.0	5.7	3.5	2.0	1.2	1.0
16.....	1.6	12.5	4.1	11.5	19.8	13.8	9.9	5.7	3.4	2.1	1.2	1.0
17.....	1.6	9.9	5.8	11.0	24.5	12.0	8.8	5.7	3.3	2.2	1.2	1.0
18.....	1.5	8.4	5.8	10.9	21.0	11.8	7.9	5.7	3.2	2.2	1.2	1.0
19.....	1.4	6.9	5.8	10.6	14.0	11.9	7.5	6.0	3.1	2.1	1.2	1.0
20.....	1.4	6.9	5.7	10.3	11.5	12.2	7.4	6.4	3.0	2.1	1.2	1.0
21.....	1.3	8.7	5.6	9.0	10.7	12.5	7.3	6.0	3.0	2.0	1.2	1.0
22.....	1.2	11.6	5.5	9.2	10.8	12.0	7.2	6.0	2.9	2.0	1.2	1.0
23.....	1.2	14.5	5.4	9.0	14.8	11.5	7.0	5.8	2.8	2.0	1.2	1.0
24.....	1.2	13.8	5.2	8.8	16.9	10.6	6.6	5.6	2.8	1.9	1.1	1.0
25.....	1.1	13.4	5.0	8.6	16.3	9.7	6.2	5.4	2.7	1.9	1.1	1.0
26.....	1.1	10.0	4.9	8.5	15.0	9.6	6.6	5.2	2.7	1.8	1.1	1.0
27.....	1.0	8.7	4.8	7.5	15.5	9.5	7.0	5.1	2.6	1.8	1.1	1.0
28.....	1.0	8.0	4.6	6.4	16.7	9.5	7.3	5.0	2.6	1.8	1.1	1.0
29.....	1.0	7.2	4.4	5.6	15.2	10.8	7.5	4.9	2.5	1.7	1.1	1.0
30.....	1.0	6.6	4.3	5.4	.....	13.4	7.7	4.8	2.5	1.7	1.1	1.0
31.....	1.0	.....	4.2	5.2	.....	12.8	.....	4.8	.....	1.6	.....	.....
1904-5.												
1.....	.9	.9	2.5	16.8	5.8	4.0	7.4	2.7	3.0	1.8	.8	.5
2.....	.9	1.0	2.7	11.8	5.7	4.0	7.2	2.5	3.0	1.7	.8	.5
3.....	.9	1.0	2.6	9.4	5.7	3.7	7.0	2.6	3.0	1.6	.8	.5
4.....	.9	1.0	2.4	8.0	5.6	3.5	6.8	2.6	3.3	1.6	.8	.5
5.....	.9	1.0	2.2	7.6	5.2	3.9	6.7	2.5	3.5	1.6	.8	.5
6.....	.9	1.0	2.0	6.8	4.8	3.3	6.6	2.3	3.6	1.6	.8	.5
7.....	.9	1.0	1.9	6.3	4.5	3.1	6.4	2.3	4.0	1.5	.7	.5
8.....	.9	1.2	1.9	5.7	4.0	2.9	6.0	2.3	3.9	1.5	.7	.5
9.....	.9	1.1	1.8	5.3	4.0	2.9	5.5	2.4	3.8	1.4	.7	.5
10.....	.9	1.1	2.0	4.8	3.8	2.9	5.1	4.0	3.4	1.4	.7	.5
11.....	1.1	1.0	2.8	4.5	3.6	2.9	4.8	4.5	3.2	1.2	.7	.5
12.....	1.6	1.0	3.9	4.0	3.4	2.8	4.5	4.4	3.0	1.2	.7	.5
13.....	1.9	1.0	5.2	3.8	3.1	2.6	4.1	4.6	2.8	1.2	.7	.5
14.....	1.6	1.0	8.0	3.9	3.0	2.6	4.0	4.4	2.6	1.2	.7	.5
15.....	1.2	1.2	8.9	4.2	2.9	2.4	4.0	4.2	2.6	1.3	.7	.5
16.....	1.4	1.3	9.6	5.5	2.9	2.4	3.9	4.0	2.5	1.3	.7	.5
17.....	1.6	1.6	8.0	5.7	2.9	2.6	3.9	3.8	2.2	1.3	.7	.5
18.....	2.2	2.0	6.7	5.1	3.0	2.5	3.7	3.6	2.1	1.4	.7	.5
19.....	1.8	2.4	6.8	5.0	3.2	2.6	3.6	3.4	2.0	1.4	.7	.5
20.....	1.7	2.5	6.0	5.0	3.6	2.8	3.6	3.2	1.9	1.4	.7	.5
21.....	1.6	2.5	5.0	4.8	3.9	3.7	3.6	3.2	1.8	1.5	.7	.5
22.....	1.4	3.0	4.8	5.0	4.1	6.8	3.5	3.3	1.8	1.2	.7	.5
23.....	1.3	2.8	4.7	5.8	4.3	7.5	3.2	3.5	1.8	1.0	.7	.5
24.....	1.2	3.2	5.3	7.8	5.2	7.4	3.0	4.0	1.8	.8	.7	.5
25.....	1.1	2.6	6.4	8.9	5.0	8.4	3.1	4.1	1.8	.8	.6	.5
26.....	1.0	2.6	7.5	8.8	4.8	10.0	3.1	3.8	1.8	.8	.5	.7
27.....	1.0	2.5	6.4	8.5	4.5	13.0	3.1	3.6	2.0	.8	.5	.8
28.....	1.0	2.4	5.7	7.8	4.2	12.9	3.0	3.5	2.0	.8	.5	.9
29.....	.9	2.4	6.3	7.2	.....	11.0	2.9	3.4	2.0	.8	.5	1.0
30.....	.9	2.5	11.0	6.7	.....	9.5	2.8	3.2	2.0	.8	.5	1.0
31.....	.9	.....	16.8	6.0	.....	8.0	.....	3.0	.....	.8	.5	.....

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	1.0	1.7	4.0	7.4	5.8	11.4	6.2	4.8	6.6	3.0	1.4	0.8
2	1.0	1.5	4.4	7.0	5.8	9.8	7.0	4.4	5.6	2.8	1.3	.8
3	1.0	1.5	4.8	6.2	5.5	8.4	6.2	4.4	5.1	2.6	1.3	.8
4	1.0	1.4	5.0	5.4	5.3	7.6	5.7	4.0	4.8	2.6	1.2	.8
5	1.0	1.3	5.0	5.0	5.2	7.0	5.3	4.0	5.3	2.6	1.2	.8
6	1.0	1.3	4.8	5.0	5.0	6.7	5.0	4.0	5.0	2.6	1.2	.8
7	1.3	1.3	4.6	5.0	4.8	6.5	4.8	4.0	5.2	2.5	1.2	.7
8	2.0	1.3	4.6	5.0	4.4	6.5	4.9	3.6	5.8	2.5	1.2	.7
9	3.2	1.2	4.6	5.4	4.0	6.2	4.5	3.5	5.6	2.5	1.1	.7
10	2.6	1.2	4.3	6.8	4.0	6.0	4.8	3.5	5.8	2.4	1.1	.7
11	2.2	1.1	4.0	6.8	3.8	6.0	4.5	3.5	6.0	2.2	1.0	.7
12	1.8	1.1	3.0	6.8	3.8	6.0	4.3	3.5	5.6	2.0	1.0	.7
13	1.5	1.0	3.2	7.6	3.6	5.4	4.0	3.4	5.4	1.9	.9	.8
14	1.5	1.0	3.0	9.0	3.2	5.0	3.8	3.4	5.0	1.8	.9	1.7
15	2.3	1.0	3.0	9.0	3.2	4.8	3.7	3.2	4.9	1.8	.9	1.3
16	2.3	1.0	2.8	8.9	4.0	4.4	3.6	4.0	4.9	1.7	.9	1.8
17	2.3	1.0	2.8	11.0	4.0	4.0	3.6	4.2	6.0	1.7	.8	1.8
18	2.3	1.0	3.0	14.2	4.2	4.0	3.6	3.8	6.0	1.7	.8	1.5
19	2.3	1.2	3.3	12.6	5.0	3.8	3.5	3.6	5.4	1.6	.8	1.0
20	2.3	1.7	4.0	10.4	8.2	3.8	3.5	3.6	4.8	1.6	.8	.9
21	2.0	3.0	5.0	8.8	10.0	4.2	3.5	3.4	4.4	1.6	.8	.9
22	1.9	2.8	5.4	7.6	12.4	4.8	3.8	3.8	4.0	1.6	.8	.8
23	1.8	2.5	4.8	6.8	11.8	4.8	3.8	4.1	3.8	1.5	.8	.8
24	1.6	2.0	4.4	7.6	11.8	4.8	3.8	4.4	3.6	1.5	.8	.7
25	1.6	2.3	4.2	9.7	13.8	4.8	3.9	4.2	3.5	1.5	.8	.8
26	1.6	2.6	4.0	9.2	14.6	4.8	3.9	4.1	3.0	1.5	.8	.9
27	2.8	2.8	5.6	9.0	13.0	4.8	4.4	4.0	3.0	1.5	.9	.8
28	2.8	3.0	6.8	8.6	12.8	4.8	4.4	4.0	3.0	1.4	1.0	.8
29	2.6	3.0	5.4	7.0	.....	4.4	4.9	4.4	3.0	1.4	1.0	.7
30	2.0	3.5	6.0	6.5	.....	4.2	4.9	8.8	3.0	1.4	.8	.7
31	2.0	.....	6.8	6.2	.....	4.4	.....	7.6	.....	1.4	.8	.....
1906-7.												
1	.7	1.2	3.5	7.0	15.3	5.8	5.7	4.0	3.0	2.0	1.1	.9
2	.7	1.6	3.2	6.5	16.4	6.7	5.6	3.8	3.0	2.0	1.1	.9
3	.6	1.4	3.0	6.8	17.8	6.3	5.6	3.7	2.9	2.0	1.1	.8
4	.7	1.2	2.8	14.2	20.4	5.8	5.6	3.6	2.9	2.2	1.1	.8
5	.7	1.4	2.8	22.2	22.5	5.6	5.2	3.5	2.8	2.0	1.0	.8
6	.9	1.6	2.7	25.0	30.7	5.2	5.6	3.5	2.8	2.0	1.0	.8
7	.9	2.0	3.3	17.0	28.2	5.0	10.4	3.4	2.7	2.0	1.0	.8
8	.8	4.2	5.8	11.5	23.3	5.0	19.8	3.4	2.7	2.0	1.0	.8
9	.7	8.7	5.3	9.2	17.0	5.0	20.0	3.4	2.7	1.8	1.6	.8
10	.7	6.4	5.6	7.9	13.0	4.8	16.5	3.4	2.7	1.7	1.5	.8
11	.7	5.8	6.0	7.0	11.0	5.6	13.5	3.5	2.6	1.6	1.3	.8
12	.7	6.0	6.1	6.3	9.9	5.4	11.8	4.0	2.6	1.6	1.2	.8
13	.7	5.0	5.5	6.0	8.8	5.0	10.4	3.9	3.3	1.5	1.1	.8
14	.8	7.0	5.0	5.6	8.1	5.0	9.0	3.7	3.3	1.5	1.0	.7
15	.9	9.1	4.6	5.0	7.5	4.6	8.8	3.6	3.2	1.5	1.0	.7
16	1.1	10.9	5.1	4.6	7.0	4.4	8.0	3.4	3.1	1.5	1.0	.8
17	1.5	12.3	5.5	4.2	6.6	4.3	7.0	3.3	3.1	1.5	1.0	.8
18	3.0	11.4	6.2	4.0	6.4	5.2	6.6	3.4	3.0	1.4	.9	.9
19	3.0	12.1	5.9	4.0	5.8	9.1	6.5	3.5	2.9	1.4	.9	1.0
20	2.6	9.8	7.0	4.0	5.5	10.0	6.4	3.8	2.7	1.4	.9	.9
21	2.4	8.0	10.0	4.0	5.2	11.0	6.4	4.0	2.6	1.4	.8	.9
22	2.0	8.0	10.0	4.0	5.0	9.8	6.3	3.8	2.5	1.3	.8	.8
23	1.8	7.7	8.5	3.9	5.0	8.7	6.0	3.6	2.4	1.3	.8	.7
24	1.6	6.7	7.9	3.9	5.0	8.5	5.8	3.6	2.3	1.3	.8	.7
25	1.4	5.9	7.6	3.9	5.0	8.0	5.6	3.4	2.3	1.3	.8	.7
26	1.3	5.2	9.1	4.6	5.0	7.5	5.4	3.3	2.3	1.2	.8	.7
27	1.2	4.8	9.5	5.0	6.5	6.9	5.2	3.2	2.2	1.2	1.0	.7
28	1.4	4.4	9.6	5.6	6.0	6.2	4.8	3.1	2.1	1.2	1.0	.7
29	1.5	4.0	8.0	7.7	.....	5.9	5.4	3.0	2.1	1.2	1.0	.7
30	1.4	3.8	8.2	12.0	.....	5.8	4.2	3.0	2.1	1.1	.9	.7
31	1.3	.....	7.2	14.2	.....	5.7	.....	3.0	.....	1.1	.9	.....

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	0.9	1.1	4.6	10.5	4.0	4.2	5.4	4.4	3.7	3.0	1.5	1.3
2.....	1.0	1.0	4.0	10.3	3.9	4.5	5.4	4.5	3.6	3.0	1.5	1.3
3.....	1.0	.9	3.6	9.6	3.7	4.5	5.3	4.5	3.6	3.0	1.5	1.0
4.....	1.1	1.3	3.3	8.7	3.6	4.4	5.3	4.5	3.6	2.9	1.5	1.0
5.....	1.0	1.2	3.2	8.2	4.0	4.2	5.3	4.4	3.6	2.8	1.5	1.0
6.....	1.0	1.1	3.3	7.0	5.4	4.1	5.0	4.3	3.6	2.7	1.5	1.0
7.....	.9	.9	3.2	7.4	6.5	4.0	4.7	4.1	3.5	2.6	1.5	.9
8.....	.9	.9	3.2	6.9	7.8	3.8	4.5	4.4	3.5	2.5	1.4	1.0
9.....	.8	.8	4.0	7.5	7.2	3.6	4.2	4.6	3.5	2.4	1.3	1.0
10.....	.7	.8	3.9	10.0	7.1	3.6	4.1	4.5	3.5	2.3	1.2	1.0
11.....	.7	.8	4.4	9.9	6.5	3.6	4.1	4.2	3.5	2.2	1.2	1.0
12.....	.7	.7	5.3	8.8	6.1	3.6	4.0	4.1	3.6	2.1	1.1	1.0
13.....	.7	.7	7.5	8.0	5.8	3.8	4.3	4.0	3.7	2.0	1.1	1.0
14.....	.7	.8	11.4	7.6	5.6	3.8	4.2	3.9	3.8	2.0	1.1	.9
15.....	.7	.9	12.0	7.5	5.2	5.4	4.4	3.8	3.7	2.0	1.1	.9
16.....	.7	1.2	9.4	7.5	4.9	10.3	4.3	4.3	3.6	2.0	1.1	.9
17.....	.7	1.4	7.5	7.0	5.0	13.3	4.4	5.3	3.5	2.0	1.1	.9
18.....	.7	1.2	6.5	6.4	5.2	13.8	4.5	5.5	3.4	1.9	1.0	.9
19.....	.7	1.0	6.0	6.0	5.0	11.8	4.9	5.9	3.4	1.9	1.0	.9
20.....	.7	1.2	6.2	6.3	4.7	9.4	5.0	6.6	3.4	1.8	1.0	.9
21.....	.7	1.8	7.0	8.3	4.4	8.0	5.2	6.7	3.5	1.8	1.0	.8
22.....	.7	3.5	10.3	8.2	4.2	7.0	5.2	6.1	4.5	1.7	1.0	.8
23.....	.6	3.2	17.0	7.3	4.0	6.3	4.9	5.6	5.0	1.7	1.0	.8
24.....	.6	5.0	22.5	6.8	4.0	5.8	4.6	5.1	4.5	1.7	1.0	.8
25.....	.6	7.5	20.8	6.1	3.8	5.5	6.0	4.8	4.0	1.6	1.0	.8
26.....	.6	10.5	23.4	5.5	3.7	5.4	6.6	4.5	3.7	1.6	1.0	.8
27.....	.6	8.3	26.2	5.3	3.6	5.3	5.9	4.2	3.6	1.6	1.0	.8
28.....	.6	6.9	26.5	4.8	3.9	5.2	5.3	4.2	3.6	1.5	1.0	.7
29.....	.6	6.0	20.6	4.4	4.1	5.1	4.9	4.1	3.4	1.5	1.0	.7
30.....	.7	5.1	14.8	4.4	-----	4.9	4.6	3.9	3.1	1.5	1.3	.7
31.....	1.0	-----	11.6	4.2	-----	4.8	-----	3.8	-----	1.5	1.4	-----
1908-9.												
1.....	.7	3.1	3.1	6.0	6.0	10.6	4.2	3.4	5.3	1.9	1.2	.9
2.....	.7	3.2	2.9	5.3	5.7	10.4	4.6	3.3	5.3	1.8	1.2	.9
3.....	.8	2.8	2.8	5.0	6.3	10.7	5.0	3.3	5.3	1.8	1.1	.9
4.....	.8	2.6	2.6	5.4	7.1	10.4	4.8	3.6	4.9	1.8	1.1	.8
5.....	.8	2.4	2.4	8.8	7.2	10.0	4.6	4.1	4.6	1.8	1.1	.8
6.....	.8	2.2	2.2	10.5	7.2	9.7	4.5	4.0	4.3	1.8	1.1	.8
7.....	.8	2.0	2.1	12.7	7.2	8.4	4.4	3.8	3.9	2.4	1.1	.8
8.....	.8	1.9	2.1	14.2	7.0	7.6	4.2	3.5	3.8	3.2	1.1	.8
9.....	.8	1.8	2.1	15.3	6.6	7.2	4.0	3.3	3.4	2.8	1.1	.8
10.....	.8	1.7	2.1	13.5	6.6	7.3	3.9	3.3	3.2	2.3	1.1	.8
11.....	.8	1.6	2.0	10.5	6.7	6.8	3.9	3.4	3.2	2.0	1.0	.8
12.....	.8	1.5	2.0	8.4	6.7	6.5	3.8	3.6	3.1	2.0	1.0	.8
13.....	.8	1.5	2.1	7.0	7.0	5.9	3.7	3.5	3.1	2.0	1.0	.8
14.....	1.0	1.5	2.7	6.4	7.8	5.6	3.6	3.3	3.0	2.0	1.0	.8
15.....	2.6	1.4	3.0	6.0	8.1	5.4	3.5	3.2	2.9	1.9	1.0	.8
16.....	2.5	1.4	2.9	12.4	8.3	5.2	3.5	3.1	2.8	1.8	1.0	.8
17.....	5.1	1.4	2.8	18.2	9.3	5.1	3.4	3.0	2.8	1.7	1.0	.8
18.....	3.8	1.4	2.6	20.5	13.3	5.3	3.4	3.0	2.8	1.7	1.0	.8
19.....	3.0	1.6	2.4	19.8	13.3	5.2	3.4	2.9	2.7	1.6	1.0	.8
20.....	2.6	2.5	2.2	20.3	13.1	5.0	3.3	2.8	2.7	1.6	1.0	.8
21.....	2.5	5.0	2.1	21.0	12.6	4.9	3.2	2.8	2.6	1.6	1.0	.8
22.....	2.5	5.8	2.0	23.4	12.1	4.7	3.2	2.8	2.4	1.6	1.0	.8
23.....	3.0	6.0	2.2	23.3	10.5	4.5	3.0	2.8	2.4	1.5	1.0	.8
24.....	3.0	6.8	3.9	18.5	9.2	4.2	3.0	2.7	2.3	1.5	1.0	.8
25.....	2.5	6.5	5.8	13.5	10.3	4.1	3.0	2.6	2.2	1.5	1.0	.8
26.....	2.4	5.7	5.4	10.9	12.0	4.0	3.0	2.6	2.2	1.4	1.0	.8
27.....	2.3	5.0	7.6	9.3	11.2	3.9	2.9	2.7	2.1	1.3	1.0	.8
28.....	2.2	4.4	7.4	8.2	10.5	3.9	3.2	3.3	2.1	1.3	1.0	.8
29.....	2.2	4.0	7.3	7.3	-----	4.0	3.8	4.1	2.0	1.3	.9	.8
30.....	2.1	5.5	8.8	6.6	-----	4.1	3.7	4.5	2.0	1.2	.9	1.0
31.....	2.1	-----	7.2	6.2	-----	4.2	-----	4.6	-----	1.2	.9	-----

Daily gage height, in feet, of Willamette River at Albany, Oreg., for 1878-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	1.3	1.8	12.0	6.4	8.5	13.8	4.0	3.4	2.3	1.6	0.9	0.7
2	1.4	4.6	11.7	5.8	7.8	16.6	4.0	3.3	2.2	1.5	.8	.7
3	1.3	4.0	10.0	5.0	7.0	20.0	4.2	3.2	2.2	1.4	.8	.7
4	1.2	4.4	8.5	4.6	6.2	18.3	4.8	3.4	2.1	1.3	.8	.8
5	1.1	3.4	7.5	4.2	5.8	16.0	4.6	3.7	2.0	1.3	.8	.8
6	1.0	3.0	7.0	4.0	5.6	12.7	4.4	3.8	2.0	1.4	.8	.7
7	1.0	3.0	6.5	3.8	5.4	10.0	4.5	3.6	2.0	1.4	.8	.7
8	1.5	3.1	7.0	4.6	5.2	9.4	4.4	3.5	2.0	1.3	.8	.7
9	1.1	3.3	9.0	5.0	5.0	8.4	4.3	3.4	1.9	1.3	.8	.7
10	1.0	3.6	12.3	4.9	4.8	7.6	4.3	3.4	1.9	1.3	.8	.6
11	1.0	4.7	11.5	4.7	5.1	7.1	4.5	4.8	1.8	1.2	.8	.6
12	1.0	5.8	11.0	4.3	5.3	6.8	4.4	5.7	1.9	1.2	.8	.6
13	1.0	4.9	12.7	4.0	5.5	6.6	4.6	5.1	2.2	1.1	.8	.6
14	1.0	4.4	14.5	4.0	7.0	6.7	4.5	4.5	2.0	1.2	.8	.6
15	1.0	4.2	12.8	4.1	8.6	6.7	4.4	4.2	1.9	1.2	.8	.6
16	.9	3.6	10.8	3.9	8.2	6.7	4.0	3.9	1.8	1.2	.8	.6
17	.9	3.2	8.8	3.8	7.3	6.3	3.8	3.6	1.8	1.1	.7	.6
18	.8	3.0	7.7	3.8	6.5	6.0	3.8	3.3	1.9	1.1	.7	.6
19	.9	3.3	6.8	4.3	7.5	5.9	3.8	3.2	1.9	1.1	.7	.7
20	1.1	7.7	6.3	6.4	9.9	6.2	4.0	3.0	1.8	1.1	.7	.7
21	1.4	13.3	5.8	6.0	9.5	5.9	4.2	2.9	1.8	1.0	.7	.8
22	1.7	14.3	5.3	5.8	9.0	5.6	4.1	2.8	2.0	1.0	.7	1.0
23	1.7	16.3	4.9	7.2	8.3	5.7	4.0	2.7	2.0	1.0	.7	1.1
24	1.7	28.5	4.6	9.6	9.0	6.9	3.9	2.7	1.9	1.0	.7	.8
25	1.5	29.3	4.4	10.4	10.2	6.4	3.9	2.7	1.9	1.0	.7	.8
26	1.2	24.4	4.2	9.7	12.5	5.8	4.1	2.7	1.9	1.0	.7	.8
27	1.0	18.8	4.1	9.0	12.4	5.3	4.0	2.7	1.7	1.0	.7	.7
28	1.0	12.4	4.0	8.4	12.4	5.0	3.9	2.6	1.6	.9	.7	.7
29	1.0	11.0	3.8	10.0	.....	4.7	3.7	2.6	1.6	.9	.7	.7
30	1.1	10.7	3.7	10.2	.....	4.4	3.5	2.5	1.6	.9	.7	.7
31	1.2	.....	4.2	9.0	.....	4.2	.....	2.4	.....	.9	.7	.....

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1878-79.												
1	6,450	4,360	11,200	47,600	36,700	11,200	21,800	5,970	3,140	2,760
2	6,930	4,360	10,000	42,500	32,100	11,200	19,200	5,970	2,950	2,580
3	15,500	4,150	9,220	32,500	30,700	13,900	18,500	5,730	2,950	2,400
4	30,700	3,940	8,430	31,600	26,300	13,600	16,800	5,500	2,950	2,400
5	29,400	3,940	8,170	34,800	23,000	12,100	15,800	5,500	2,950	2,220
6	21,400	3,730	7,920	35,800	21,800	11,500	14,200	6,210	2,950	2,220
7	18,500	3,730	7,670	42,500	20,300	11,800	13,900	5,970	2,760	2,220
8	21,000	3,940	9,220	47,600	18,900	12,400	13,900	5,500	2,760	2,040
9	18,400	4,360	12,100	45,000	18,500	13,600	13,000	5,270	2,580	2,040
10	20,300	7,420	16,800	46,600	17,500	15,200	12,100	5,040	2,580	2,400
11	24,200	10,000	22,200	50,300	21,000	16,800	11,500	5,040	2,400	2,580
12	20,300	12,100	33,000	55,200	21,000	17,500	12,100	5,040	2,400	2,760
13	16,800	10,600	50,300	53,600	20,300	18,500	11,200	5,970	2,400	2,580
14	16,800	10,000	55,800	41,500	20,700	18,500	10,600	5,500	2,400	2,400
15	15,800	10,900	45,000	40,500	26,800	18,200	10,300	5,040	2,220	2,220
16	10,600	10,000	45,000	32,100	29,800	17,500	9,760	5,040	2,220	2,220
17	9,760	9,760	38,600	27,600	26,300	16,800	9,220	4,810	2,220	2,220
18	10,600	30,700	24,200	23,000	15,500	8,430	4,580	2,220	2,220	2,040
19	8,430	11,200	27,600	22,200	20,300	16,800	7,920	4,360	2,220	2,040
20	7,920	10,600	39,100	23,000	18,500	22,200	7,670	4,360	2,220	2,040
21	7,170	10,600	45,500	22,200	17,800	27,600	7,420	4,360	2,220	1,870
22	6,690	13,600	47,600	21,000	16,800	23,400	7,170	4,150	2,760	1,870
23	6,690	22,200	42,500	21,000	15,200	23,400	7,420	3,940	3,140	1,870
24	14,200	6,450	35,300	30,700	23,000	16,100	23,400	8,430	3,730	3,140
25	10,600	5,970	51,400	31,600	36,200	14,200	20,300	7,920	3,730	3,140
26	9,220	5,970	40,000	35,300	59,800	13,900	18,500	7,420	3,730	2,760
27	8,430	5,270	29,400	32,100	85,100	13,000	22,200	7,170	3,730	2,950
28	7,170	5,270	22,600	40,000	109,000	11,800	33,500	6,930	3,330	2,950
29	6,930	5,040	17,800	.....	80,400	11,500	33,000	6,450	3,330	3,140
30	6,690	4,810	14,800	.....	54,100	11,200	30,700	6,210	3,330	3,330
31	4,580	12,700	.....	43,000	.....	26,300	.....	.....	2,950	4,360

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1879-80.												
1	3,730	3,330	8,430	20,700	16,800	13,600	15,200					
2	3,940	3,140	12,100	40,100	14,200	14,800	16,800					
3	4,150	3,140	26,300	77,100	13,600	16,800	18,200					
4	3,730	3,140	47,600	112,000	12,100	16,800	28,500					
5	3,330	2,950	53,000	87,100	12,100	16,100	26,800					
6	3,530	3,330	77,100	80,400	11,200	15,200	21,400					
7	4,150	15,200	116,000	97,400	10,600	15,200	18,500					
8	5,040	13,600	90,500	98,800	10,300	15,200	18,500					
9	5,040	10,600	53,000	87,100	9,760	14,500	17,500					
10	4,360	10,600	37,600	67,600	9,220	14,200	25,500					
11	5,500	10,600	30,700	53,000	9,220	13,300	33,000					
12	6,690	18,500	33,000	40,500	9,220	12,100	29,800					
13	6,690	22,200	45,000	36,200	10,000	11,500	26,300					
14	5,970	20,300	47,600	38,600	11,200	10,600	27,600					
15	5,500	33,900	50,300	43,500	26,300	10,000	21,000					
16	5,970	37,600	45,000	41,500	47,100	9,220	23,400					
17	6,690	33,000	37,600	36,700	42,500	9,220	26,300					
18	5,970	24,200	33,000	33,000	31,600	8,430	23,400					
19	5,040	18,500	26,300	30,700	27,200	8,430	21,000					
20	4,580	15,200	22,200	27,600	22,200	8,430	20,300					
21	4,360	13,600	19,200	25,000	17,500	7,920	22,200					
22	3,940	12,100	16,800	26,300	15,200	7,920	21,000					
23	3,730	10,600	15,200	28,500	15,200	8,430	21,800					
24	3,730	10,600	13,000	38,600	14,200	9,220	20,700					
25	3,730	10,600	12,100	38,600	15,200	10,600	19,200					
26	4,360	9,220	11,200	45,000	15,200	11,200	22,200					
27	3,940	9,220	12,100	37,600	16,100	15,200	17,500					
28	3,730	7,920	15,200	35,300	14,800	15,200	18,500					
29	3,530	7,920	17,500	25,000	13,600	14,800	20,700					
30	3,530	7,920	15,200	21,000		14,200	24,200					
31	3,330		14,200	18,500		14,800						
1892.												
1					16,100	16,800	19,200	16,800	13,600			
2					15,200	16,100	20,300	16,500	13,000			
3					13,900	15,200	21,000	16,500	12,400			
4					13,000	14,500	22,600	15,200	11,800			
5					12,100	13,600	23,400	14,200	11,200			
6					11,800	13,000	22,200	13,600	10,600			
7					11,200	12,400	23,000	14,500	10,600			
8					10,600	12,100	22,200	13,900	10,300			
9					10,300	11,800	22,200	14,800	10,000			
10					10,000	12,400	24,200	14,800	9,760			
11					10,300	13,000	26,300	15,200	9,490			
12					12,700	13,300	25,500	15,200	9,760			
13					12,100	13,300	24,600	15,200	10,000			
14					11,500	13,600	20,300	14,800	10,000			
15					11,200	14,800	19,900	14,500	10,300			
16					10,600	14,800	22,600	14,500	10,000			
17					10,000	14,800	20,300	14,800	10,000			
18					9,760	14,800	18,900	15,500	9,760			
19					9,760	14,500	16,800	16,100	9,760			
20					10,300	14,500	16,500	16,800	9,760			
21				16,100	11,200	14,500	16,100	17,800	9,490			
22				15,200	14,800	14,500	16,800	19,200	9,490			
23				14,500	16,800	14,200	17,500	19,900	9,220			
24				14,200	16,100	13,900	18,500	19,600	8,950			
25				13,600	15,500	13,600	19,200	18,900	8,430			
26				13,600	14,800	13,300	20,300	18,200	8,170			
27				13,600	14,200	13,300	19,600	17,500	7,920			
28				14,200	13,600	13,600	18,500	16,800	7,420			
29				15,200	13,000	19,200	18,200	16,100	7,170			
30				16,100		19,900	17,500	15,500	6,690			
31				17,500		20,700		14,800				

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—(Continued).

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1892-93.												
1.	-----	2,950	13,600	33,500	6,930	20,300	25,500	18,900	15,500	8,690	4,580	3,140
2.	-----	2,950	13,900	25,000	6,930	18,500	23,800	23,400	14,800	8,430	4,580	3,140
3.	-----	2,950	13,000	21,400	7,170	16,100	22,200	24,200	14,800	8,170	4,360	3,140
4.	-----	2,950	11,500	19,200	10,000	15,800	27,200	26,300	15,200	7,920	4,360	2,950
5.	-----	2,950	10,900	16,800	14,800	15,500	33,900	26,300	15,500	7,670	4,150	2,950
6.	-----	2,950	10,000	15,200	20,300	15,200	42,500	26,300	15,800	7,670	4,150	2,950
7.	-----	2,950	9,490	13,600	18,200	14,500	46,600	25,500	15,500	7,420	3,940	3,140
8.	-----	2,950	8,690	12,700	16,100	14,200	42,500	25,000	15,500	7,170	3,940	3,140
9.	-----	2,950	7,920	12,100	17,500	14,200	34,800	30,300	15,200	7,170	3,730	3,140
10.	-----	3,140	7,420	11,800	18,900	14,200	30,300	27,600	15,200	7,170	3,730	3,330
11.	-----	3,330	7,170	11,200	22,200	14,500	27,600	25,000	15,200	7,170	3,530	3,530
12.	-----	3,730	6,930	10,300	39,600	14,800	27,600	23,400	14,500	6,930	3,530	3,530
13.	-----	4,580	6,450	10,000	65,100	15,200	27,200	23,400	13,900	6,930	3,330	3,530
14.	-----	5,040	6,210	10,300	73,200	14,500	25,500	23,400	13,000	6,450	3,330	3,330
15.	-----	5,500	5,970	10,600	46,600	14,200	24,200	24,200	12,100	6,450	3,330	3,330
16.	-----	6,450	5,730	10,600	30,700	13,600	22,600	24,200	11,800	6,210	3,330	3,330
17.	-----	5,970	5,500	10,900	28,500	14,200	21,000	25,000	11,800	6,210	3,330	3,330
18.	-----	5,500	5,500	10,900	24,200	15,200	19,600	26,300	11,500	5,970	3,330	3,330
19.	-----	5,270	5,500	10,000	26,800	22,200	18,500	26,800	10,900	5,970	3,330	3,530
20.	-----	5,040	5,500	9,760	29,400	21,400	17,500	25,900	10,600	5,730	3,330	3,730
21.	-----	5,730	5,500	9,220	28,500	20,300	21,400	25,000	10,000	5,730	3,330	4,150
22.	-----	7,170	6,930	8,430	25,900	19,600	27,600	24,200	9,760	5,500	3,140	4,040
23.	-----	15,500	7,920	8,170	24,200	18,500	28,900	22,200	9,490	5,500	3,140	5,730
24.	-----	27,600	21,400	7,920	23,400	17,800	30,700	20,700	9,490	5,270	3,140	5,500
25.	-----	18,900	29,400	7,670	23,000	17,100	26,300	17,800	9,760	5,270	3,140	5,040
26.	-----	15,500	45,000	7,170	22,600	19,200	24,200	16,800	9,760	5,040	3,140	4,580
27.	-----	13,600	64,500	7,170	22,200	18,500	21,800	15,200	9,490	5,040	3,140	4,580
28.	-----	12,400	73,200	7,170	21,800	20,300	21,000	14,500	9,220	4,810	2,950	4,360
29.	-----	11,500	62,700	7,170	-----	23,000	20,300	15,200	8,950	4,810	2,950	4,360
30.	-----	12,700	55,800	7,170	-----	24,200	18,500	15,800	8,690	4,580	2,950	4,150
31.	-----	-----	43,500	7,170	-----	26,800	-----	16,100	-----	4,580	2,950	-----
1893-94.												
1.	5,730	6,690	-----	15,500	34,400	32,100	42,500	22,200	24,200	11,800	5,500	4,150
2.	7,420	6,690	-----	27,600	29,400	33,000	34,800	20,300	24,200	11,800	5,500	4,150
3.	6,450	6,690	-----	30,700	25,000	30,300	29,800	18,200	24,200	11,800	5,500	4,150
4.	5,500	7,170	-----	25,000	22,600	27,600	28,100	18,200	29,400	11,500	5,730	4,150
5.	8,170	7,920	-----	22,200	20,300	25,900	26,300	18,500	35,800	11,500	5,730	4,150
6.	13,000	13,900	-----	20,300	18,500	24,200	24,200	18,500	32,500	11,200	5,500	4,150
7.	13,900	26,300	-----	22,200	18,500	30,700	24,200	18,500	26,300	10,900	5,500	4,150
8.	18,900	24,200	-----	24,200	31,200	31,600	25,500	18,900	22,600	10,600	5,270	4,150
9.	34,400	20,700	-----	24,200	40,500	35,300	27,600	18,500	21,800	10,300	5,270	4,150
10.	55,200	20,300	-----	24,200	35,300	43,500	25,500	18,500	21,000	9,760	5,270	4,150
11.	58,600	18,500	-----	39,100	31,200	42,500	30,700	18,200	25,000	9,220	5,270	4,150
12.	35,300	16,800	-----	46,600	26,300	47,000	28,500	18,200	24,200	8,950	5,040	4,150
13.	29,400	15,200	-----	45,000	25,000	67,600	26,300	18,200	23,000	8,690	5,040	4,360
14.	24,200	13,600	-----	64,500	22,200	90,500	24,200	18,200	21,000	8,430	4,810	4,580
15.	20,700	12,100	-----	120,000	21,400	93,300	25,900	17,800	19,600	8,430	4,810	4,810
16.	17,500	10,900	-----	157,000	24,200	86,400	25,000	17,500	18,200	8,430	4,810	4,580
17.	15,800	10,000	-----	133,000	26,300	105,000	22,200	17,100	18,500	8,170	4,810	4,360
18.	14,800	9,490	-----	85,700	31,600	123,000	20,300	15,800	19,600	7,920	4,580	4,360
19.	13,600	8,950	-----	58,600	32,100	88,500	18,500	14,500	24,200	7,670	4,580	4,360
20.	12,400	8,430	-----	50,300	30,700	73,200	18,500	15,800	22,600	7,420	4,580	4,150
21.	11,200	7,920	-----	53,000	28,500	55,200	18,900	16,800	20,300	7,170	4,580	4,150
22.	10,600	8,170	-----	75,800	24,200	40,500	20,300	19,600	18,900	6,930	4,580	4,150
23.	10,300	8,430	-----	100,000	20,300	34,400	22,200	19,600	17,500	6,690	4,360	3,940
24.	10,000	14,200	-----	97,400	18,500	30,300	22,200	22,600	16,100	6,690	4,360	3,940
25.	9,220	21,400	-----	70,700	17,500	29,400	21,800	23,800	15,200	6,690	4,360	3,940
26.	8,690	24,600	-----	53,000	16,800	28,500	22,200	26,300	14,200	6,690	4,360	3,940
27.	8,170	30,700	-----	43,500	19,900	30,700	22,600	31,600	13,600	6,450	4,360	4,150
28.	7,920	37,600	-----	37,600	24,200	35,300	23,000	30,700	13,000	6,210	4,360	4,580
29.	7,670	52,400	-----	35,300	-----	40,500	22,600	27,600	12,400	5,970	4,360	5,040
30.	7,170	89,800	-----	31,600	-----	53,000	22,200	23,400	12,100	5,730	4,150	4,810
31.	6,690	-----	-----	34,800	-----	54,600	-----	22,200	-----	5,500	4,150	-----

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1894-95.												
1.				10,600	10,000	13,600	21,000	13,000	16,800	5,500	3,330	2,950
2.				11,800	9,490	12,400	19,900	12,100	15,800	5,500	3,330	2,950
3.				30,300	9,220	12,100	19,200	13,600	14,800	5,500	3,330	2,950
4.				15,500	8,950	11,500	18,500	15,200	14,200	5,500	3,330	2,950
5.				73,900	8,950	10,600	20,700	20,300	13,600	5,500	3,330	2,950
6.				66,300	8,690	9,760	18,500	34,800	12,400	5,270	3,140	2,950
7.				55,200	8,430	9,220	17,800	39,100	11,200	5,270	3,140	2,950
8.				39,600	8,170	9,220	17,500	29,400	10,600	5,270	3,140	2,950
9.				33,000	7,920	9,220	17,100	25,900	9,760	5,040	3,140	2,950
10.				35,300	7,920	8,950	16,800	22,200	9,220	5,040	3,140	3,140
11.				35,800	7,670	8,950	16,100	18,500	8,950	4,810	3,140	3,140
12.				41,500	7,670	8,690	15,500	16,800	8,690	4,810	3,140	3,330
13.				67,000	8,950	8,430	15,200	16,100	8,430	4,580	2,950	3,530
14.				79,700	9,490	8,170	14,800	15,500	8,170	4,360	2,950	3,530
15.				77,100	10,000	7,920	14,200	15,200	7,920	4,360	2,950	3,730
16.				53,000	10,600	7,670	13,600	14,800	7,670	4,360	2,950	3,730
17.				38,600	12,100	7,420	22,200	14,200	7,670	4,150	2,950	3,530
18.				30,300	13,300	7,420	26,300	13,600	7,420	4,150	2,950	3,530
19.				25,500	14,200	7,170	22,200	12,100	7,420	4,150	2,950	3,330
20.				22,200	13,900	6,930	18,500	10,600	7,170	4,150	2,950	3,330
21.				18,900	13,600	7,670	13,600	10,300	6,930	3,940	2,950	3,330
22.				18,200	14,500	9,760	15,200	10,900	6,930	3,940	2,950	3,330
23.				17,800	15,800	15,800	15,200	9,490	6,690	3,940	2,950	3,330
24.				17,100	17,100	23,400	14,800	9,220	6,690	3,940	2,950	3,330
25.				15,800	18,500	42,500	14,800	9,490	6,450	3,940	2,950	3,330
26.				14,500	17,500	40,000	14,800	10,900	6,450	3,730	2,950	3,330
27.				13,000	15,200	32,100	14,200	15,200	6,210	3,730	2,950	3,140
28.				12,100	14,200	29,400	13,900	20,300	5,970	3,530	2,950	3,140
29.				11,200		32,100	13,900	20,700	5,730	3,530	2,950	3,140
30.				10,600		27,600	13,900	18,500	5,500	3,530	2,950	2,950
31.				10,300		23,800		18,200		3,330	2,950	
1895-96.												
1.	2,950	2,220	5,500	30,300	21,800	60,900	18,500	17,800	22,200	11,800	5,040	3,730
2.	2,950	2,220	7,670	53,000	24,200	46,000	18,200	22,200	20,300	11,500	5,040	4,360
3.	2,950	2,220	8,690	53,000	26,300	33,000	16,800	35,300	18,500	11,200	5,040	4,810
4.	2,950	2,220	12,400	34,800	24,200	26,300	15,800	45,000	17,800	10,900	4,810	4,580
5.	2,950	2,220	9,490	28,100	22,600	23,400	15,500	60,900	17,500	10,600	4,810	4,360
6.	2,950	2,220	7,920	24,200	22,200	22,200	14,800	51,900	16,800	10,300	4,580	4,150
7.	2,950	2,220	9,220	24,200	20,300	22,600	15,200	40,500	16,500	10,000	4,580	3,940
8.	2,950	2,220	9,760	25,900	19,200	28,500	16,800	35,800	16,100	9,760	4,360	3,730
9.	2,950	2,220	10,000	28,500	18,500	35,300	18,500	31,600	15,800	9,490	4,360	3,530
10.	2,950	2,220	8,950	33,000	17,800	28,500	22,600	28,900	15,500	9,220	4,150	3,330
11.	2,950	2,400	10,000	29,400	16,500	27,600	25,900	30,700	15,200	8,690	4,150	3,330
12.	2,950	2,400	11,800	24,600	15,200	26,800	32,500	35,300	14,800	8,170	3,940	3,330
13.	2,950	2,760	11,500	20,300	14,500	24,200	40,000	40,000	14,800	7,920	3,940	3,330
14.	2,760	3,330	13,000	17,500	13,900	23,000	64,500	33,000	14,800	7,420	3,730	3,330
15.	2,760	4,580	16,800	15,500	13,600	22,200	96,000	27,600	14,500	7,170	3,730	3,330
16.	2,760	5,970	24,200	21,000	13,600	18,200	80,400	24,200	14,500	6,930	3,730	3,330
17.	2,760	5,040	22,200	47,600	13,600	15,500	53,000	25,000	14,200	6,690	3,530	3,330
18.	2,760	3,940	18,500	78,400	13,000	15,800	37,600	26,300	14,200	6,450	3,530	3,330
19.	2,760	3,730	16,800	96,000	12,100	16,100	31,200	25,500	13,900	6,210	3,530	3,330
20.	2,580	3,330	30,300	86,400	11,200	16,800	27,200	23,400	13,900	5,970	3,530	3,330
21.	2,580	3,330	65,700	77,100	11,200	17,500	22,200	21,800	13,600	5,730	3,530	3,330
22.	2,580	3,140	55,200	94,600	11,500	21,400	21,400	19,600	13,600	5,500	3,330	3,330
23.	2,580	3,140	34,400	128,000	11,800	26,300	18,500	20,300	13,600	5,500	3,330	3,330
24.	2,400	3,140	28,900	100,000	12,100	24,200	21,000	21,000	13,300	5,500	3,330	3,330
25.	2,400	2,950	26,300	63,900	12,700	26,300	22,200	21,800	13,000	5,500	3,330	3,330
26.	2,400	2,950	24,200	45,000	13,600	52,400	22,200	21,800	12,700	5,500	3,330	3,330
27.	2,400	2,950	21,000	35,300	26,800	41,500	22,200	21,800	12,700	5,270	3,330	3,330
28.	2,400	3,330	24,000	33,000	30,300	31,600	18,900	21,800	12,400	5,270	3,330	3,330
29.	2,400	6,690	25,900	30,700	47,600	26,800	18,500	22,200	12,100	5,040	3,330	3,330
30.	2,220	5,500	27,200	26,800		24,200	18,200	22,200	12,100	5,040	3,330	3,330
31.	2,220		22,200	23,800		22,200		22,200		5,040	3,330	

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1896-97.												
1	3,330	6,690	14,800	34,800	21,400	15,500	34,400	13,300	10,000	8,950	3,940	3,330
2	3,330	8,950	18,200	36,700	21,000	16,100	32,100	13,600	9,490	7,920	3,940	3,730
3	3,330	9,490	26,300	29,800	20,300	16,800	29,400	13,900	8,950	8,170	3,940	3,940
4	3,330	10,000	26,300	24,200	25,900	14,500	26,800	14,500	8,430	8,430	3,730	4,150
5	3,330	7,920	26,300	21,000	34,400	15,200	26,300	14,800	8,170	8,690	3,730	4,360
6	3,330	9,220	34,800	19,600	51,400	15,200	25,900	15,800	7,920	8,690	3,730	4,360
7	3,330	8,430	50,300	18,500	66,300	15,200	30,300	16,800	7,920	8,430	3,730	4,360
8	3,330	11,800	44,500	17,500	55,800	15,200	28,600	16,100	7,670	8,170	3,730	4,360
9	3,330	30,700	40,000	16,800	40,000	16,800	30,700	14,500	7,670	7,920	3,730	4,360
10	3,330	55,800	34,400	15,500	34,400	18,500	33,000	13,600	7,420	7,420	3,940	4,150
11	3,330	55,800	28,500	14,500	29,400	18,500	35,300	14,200	7,170	6,930	3,940	4,150
12	3,140	40,000	29,400	13,600	39,100	18,200	33,000	15,200	6,930	6,690	3,940	3,940
13	3,140	28,500	37,600	13,000	52,400	17,500	30,300	14,200	6,930	6,450	3,730	3,940
14	3,140	24,200	61,500	12,400	48,700	16,800	30,300	16,800	6,930	6,210	3,730	3,940
15	3,140	40,000	77,100	12,100	42,500	17,500	30,700	16,800	7,170	5,970	3,730	3,940
16	2,950	80,400	58,600	11,800	60,300	19,200	32,100	16,800	7,420	5,730	3,730	3,730
17	2,950	150,000	42,500	11,500	79,700	20,300	33,500	16,500	7,920	5,730	3,530	3,730
18	2,950	160,000	33,900	11,200	70,700	21,800	34,800	16,100	8,170	5,500	3,530	3,730
19	2,950	134,000	31,200	11,800	45,000	23,000	35,300	15,800	8,430	5,270	3,530	3,530
20	2,950	80,400	27,600	12,400	33,000	24,200	35,300	15,200	7,920	5,040	3,530	3,530
21	2,950	46,000	24,200	18,500	28,500	21,400	32,100	14,500	7,670	4,810	3,530	3,530
22	2,950	41,500	21,000	18,500	24,200	18,500	28,500	13,900	8,170	4,580	3,530	3,330
23	2,950	45,000	18,900	16,800	20,300	18,500	26,800	13,300	8,690	4,580	3,330	3,330
24	2,950	41,500	19,900	14,800	18,500	21,400	24,200	12,700	8,950	4,360	3,330	3,330
25	2,950	33,000	15,800	14,800	14,200	35,300	22,200	12,100	9,220	4,360	3,330	3,330
26	2,950	26,300	14,200	14,800	13,600	59,800	18,500	11,500	9,220	4,360	3,330	3,330
27	2,950	22,600	14,500	14,200	13,600	73,900	19,900	10,900	10,300	4,150	3,330	3,330
28	3,140	18,500	14,800	13,600	14,500	55,800	21,800	10,300	11,500	4,150	3,330	3,330
29	3,330	16,800	16,500	15,200	.....	53,000	19,200	10,000	10,300	4,150	3,330	3,330
30	3,530	15,200	18,200	16,800	.....	51,900	16,800	10,300	9,220	4,150	3,330	3,330
31	3,940	.....	23,800	21,400	.....	40,000	.....	10,600	.....	3,940	3,330	.....
1897-98.												
1	3,330	3,330	34,800	18,500	10,600	15,200	10,600	10,600	10,600	5,500	3,330	2,760
2	3,330	3,330	30,300	16,800	10,600	15,200	10,000	10,600	12,100	5,500	3,330	2,760
3	3,330	3,330	23,400	15,500	11,200	15,200	10,000	9,220	12,100	5,500	3,330	2,760
4	3,330	3,330	18,500	14,200	14,200	15,200	10,000	9,220	11,500	5,270	3,140	2,760
5	3,330	3,730	17,800	13,000	16,800	14,500	10,000	8,690	10,300	5,270	3,140	2,760
6	3,330	4,150	26,300	11,200	19,600	14,200	10,000	8,170	9,220	5,270	3,140	2,760
7	3,330	5,040	44,500	11,200	25,900	12,400	12,100	7,920	8,690	5,270	3,140	2,760
8	3,330	6,450	60,900	13,000	34,400	12,100	12,100	7,920	7,920	5,270	3,140	2,760
9	3,330	5,970	61,500	13,600	33,000	12,100	13,000	7,920	7,920	5,040	3,140	2,760
10	3,330	7,920	60,900	15,200	26,300	12,100	14,200	7,420	7,920	5,040	3,140	2,760
11	3,330	15,200	53,600	13,000	24,200	10,600	15,200	7,420	7,920	4,810	3,140	2,760
12	3,330	18,900	55,200	12,100	23,000	10,600	14,200	7,920	7,920	4,580	3,140	2,760
13	3,330	15,200	73,200	10,600	22,200	10,000	13,600	7,920	7,920	4,150	2,950	2,760
14	3,330	21,800	67,600	10,600	22,200	10,000	13,600	7,920	7,420	3,940	2,950	2,760
15	3,330	23,400	72,000	11,200	22,200	10,600	13,600	7,920	5,500	3,530	2,950	2,760
16	3,330	18,500	73,900	13,600	23,400	10,600	15,200	7,920	6,690	3,330	2,950	2,760
17	3,330	15,200	50,300	14,200	24,200	10,600	14,200	7,920	7,920	3,330	2,950	2,760
18	3,330	16,800	40,000	16,100	22,200	10,000	13,600	7,920	7,920	3,330	2,950	2,760
19	3,330	25,000	30,700	16,800	20,300	9,490	12,100	7,920	7,920	3,330	2,950	2,760
20	3,530	35,300	26,800	26,300	20,700	9,220	10,600	7,920	7,920	3,330	2,760	2,950
21	3,730	54,100	20,300	27,600	21,000	9,220	10,600	7,920	7,920	3,330	2,760	2,950
22	4,360	42,500	20,300	27,200	20,700	10,000	11,200	8,430	7,420	3,330	2,760	3,140
23	4,810	33,500	17,500	26,300	20,300	10,600	11,500	9,220	7,420	3,330	2,760	3,140
24	5,040	30,700	16,800	21,000	19,900	10,600	12,400	9,220	6,930	3,330	2,760	3,330
25	5,040	25,500	16,800	19,600	19,600	10,000	13,600	7,920	6,450	3,330	2,760	3,330
26	6,690	20,300	18,500	16,800	18,500	10,600	13,600	7,420	5,970	3,330	2,760	3,940
27	5,500	19,900	22,200	18,500	13,600	10,600	13,600	7,920	5,500	3,330	2,760	4,360
28	4,810	15,800	22,200	16,800	15,200	10,300	13,600	7,420	5,500	3,330	2,760	4,360
29	4,360	13,000	21,000	13,600	.....	10,600	12,100	7,920	5,500	3,330	2,760	3,940
30	3,940	16,800	20,300	14,500	.....	10,600	12,700	9,220	5,500	3,330	2,760	3,330
31	3,730	.....	19,200	12,100	.....	10,600	.....	10,300	.....	3,330	2,760	.....

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1898-99.												
1	4,360	3,730	44,500	18,500	16,800	55,800	21,800	24,200	20,300	13,600	5,730	6,690
2	5,500	5,040	50,300	18,900	18,500	97,400	14,200	25,900	22,200	13,600	5,500	6,450
3	4,360	6,210	55,800	26,300	17,100	112,000	16,800	25,000	24,200	13,600	5,500	6,450
4	3,530	6,690	42,500	27,200	15,200	89,100	16,800	22,200	23,400	13,600	5,270	6,690
5	3,330	7,920	30,700	24,200	13,900	58,600	23,400	21,400	22,600	13,600	5,270	6,690
6	3,330	7,420	25,900	21,800	13,000	42,500	20,300	21,800	21,800	13,300	5,270	6,690
7	3,330	6,690	20,300	22,200	10,900	33,000	20,300	21,400	23,000	13,000	5,270	6,690
8	3,330	6,210	16,800	22,600	15,200	30,700	20,300	19,600	18,500	12,400	5,270	6,450
9	3,330	5,500	13,600	23,000	34,800	30,700	22,200	18,500	17,500	11,800	5,040	6,210
10	3,330	5,040	13,600	23,800	67,000	30,300	23,800	21,800	18,200	11,200	5,040	5,730
11	3,330	4,580	12,400	30,300	79,700	26,300	26,800	22,200	19,900	10,900	5,040	5,500
12	3,330	4,580	11,200	33,000	63,300	25,500	24,200	21,800	22,200	10,900	5,040	5,500
13	3,330	4,360	10,600	30,700	44,500	24,200	30,300	21,800	21,000	10,600	5,040	5,270
14	3,330	3,940	9,490	26,300	35,300	26,300	30,700	19,600	19,600	10,600	5,040	5,270
15	3,330	3,330	9,220	26,300	30,700	28,100	26,300	16,800	18,900	10,600	5,040	5,040
16	3,530	3,730	9,220	28,100	29,400	33,000	24,200	16,100	18,200	10,600	5,040	4,810
17	3,530	4,360	11,500	53,600	26,800	34,800	22,600	14,800	18,500	10,600	5,040	4,810
18	3,530	10,300	13,000	55,800	24,200	32,100	22,200	14,200	18,900	10,300	5,040	4,580
19	3,530	42,000	14,800	49,700	24,200	24,200	21,800	14,500	19,200	10,000	5,270	4,580
20	3,330	67,000	18,500	51,400	24,200	25,900	22,200	15,200	19,600	9,760	5,270	4,580
21	3,330	47,600	26,300	55,200	23,000	26,300	21,000	14,500	19,900	9,220	5,500	4,580
22	3,330	28,500	28,500	68,200	21,800	28,500	20,300	14,200	18,200	8,690	5,500	4,580
23	3,330	26,300	22,600	67,000	19,200	26,300	19,600	14,500	13,600	8,170	5,970	4,360
24	3,330	28,500	19,200	50,300	18,500	23,800	18,500	15,200	15,200	7,920	6,450	4,360
25	3,330	34,800	16,100	37,600	18,500	37,600	18,500	16,100	15,200	7,670	6,690	4,360
26	3,330	25,900	15,200	30,700	22,200	33,000	18,500	18,900	15,200	7,420	6,930	4,360
27	3,330	21,000	13,000	26,300	26,300	30,700	22,200	21,800	15,200	7,170	7,420	4,150
28	3,330	18,500	12,100	22,600	34,800	24,600	22,600	22,600	15,500	6,930	7,920	4,150
29	3,330	30,700	15,800	19,900	-----	23,800	23,400	23,400	15,500	6,450	7,920	4,150
30	3,330	35,300	16,100	18,200	-----	23,400	-----	22,200	15,200	6,210	7,420	4,150
31	3,330	-----	18,200	16,800	-----	22,200	-----	20,700	-----	5,970	7,170	-----
1899-1900.												
1	4,360	7,920	61,500	18,500	15,500	25,900	33,900	10,600	8,690	6,450	4,150	2,760
2	4,580	7,670	50,300	18,900	15,200	22,200	28,500	10,300	8,430	6,210	4,150	2,760
3	4,810	7,420	45,000	21,000	15,200	22,200	25,900	10,000	7,920	5,730	4,150	2,760
4	5,040	7,170	33,000	26,300	15,200	21,800	23,400	9,760	7,920	5,300	4,150	2,760
5	4,810	7,170	28,500	18,900	15,200	21,400	14,800	9,760	7,670	5,270	3,940	2,760
6	4,580	6,930	28,500	18,500	14,200	20,300	13,600	10,000	7,670	5,270	3,940	2,760
7	4,810	6,930	24,200	18,900	14,200	18,500	15,200	10,000	7,420	5,270	3,940	2,760
8	4,580	7,170	22,200	19,200	14,200	25,900	16,800	10,600	7,170	5,040	3,730	2,950
9	4,360	7,420	22,200	19,600	15,200	32,100	18,500	10,600	6,930	5,040	3,730	3,140
10	4,150	8,170	20,300	20,300	18,900	35,300	16,800	10,900	6,690	5,040	3,730	3,140
11	3,940	7,920	26,800	20,300	18,200	29,400	17,500	10,600	6,450	5,040	3,530	3,140
12	3,940	7,920	54,100	26,300	17,500	24,200	16,500	10,000	6,210	4,810	3,530	3,140
13	3,940	8,170	98,800	50,800	16,800	22,200	16,100	10,000	5,970	4,810	3,530	3,330
14	3,730	7,920	72,000	78,400	17,800	21,400	16,800	10,000	6,210	4,580	3,330	3,330
15	3,730	7,920	54,100	120,000	16,800	18,900	18,200	9,760	6,450	4,580	3,140	3,330
16	3,730	7,920	45,000	108,000	15,800	17,800	19,600	9,760	6,690	4,360	3,140	3,330
17	4,580	8,170	43,500	72,600	15,200	16,800	15,800	11,200	6,690	4,360	3,140	3,330
18	5,730	10,000	38,600	67,600	14,500	17,500	15,200	10,600	6,930	4,360	3,140	3,330
19	8,430	11,500	30,700	61,500	14,200	18,200	13,000	10,000	6,690	4,360	3,140	3,330
20	26,800	13,000	26,300	47,100	15,200	14,200	12,100	9,490	6,690	4,360	2,950	3,140
21	40,000	19,200	22,600	36,700	19,900	18,900	12,100	9,220	6,690	4,360	2,950	3,140
22	22,200	18,500	25,900	31,200	42,500	16,500	11,800	9,220	6,690	4,360	2,950	3,140
23	18,500	16,800	28,500	26,300	68,800	14,800	11,200	8,690	6,690	4,360	2,950	3,140
24	15,800	14,800	25,000	26,300	64,500	14,800	11,200	8,690	6,690	4,360	2,950	2,950
25	13,600	13,000	21,800	42,500	42,500	14,800	10,900	7,920	6,690	4,360	2,760	2,950
26	13,000	13,600	21,400	23,800	34,800	16,800	10,600	9,220	6,450	4,360	2,760	2,950
27	10,600	18,500	18,500	21,800	34,800	18,500	10,600	10,600	6,210	4,360	2,760	2,760
28	9,760	33,000	18,200	16,800	28,500	18,200	10,600	11,500	5,970	4,150	2,760	2,760
29	9,490	49,200	15,200	18,500	-----	18,900	10,600	10,600	5,730	4,150	2,760	2,580
30	9,220	58,000	15,200	17,500	-----	25,900	10,600	9,220	5,500	4,150	2,760	2,580
31	8,690	-----	16,800	16,500	-----	40,000	-----	9,220	-----	4,150	2,760	-----

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1900-1901.												
1.....	2,760	33,000	18,200	16,800	14,500	53,000	20,300	11,200	10,600	5,270	3,940	2,950
2.....	2,950	30,700	20,300	21,000	13,600	45,000	18,200	11,200	8,440	5,270	3,730	2,950
3.....	2,950	26,300	18,500	22,200	12,700	40,000	24,200	11,500	9,220	5,270	3,530	2,950
4.....	2,950	23,800	16,800	25,000	12,100	35,300	22,600	11,800	9,220	5,270	3,330	2,950
5.....	3,140	22,600	15,200	22,200	11,500	26,300	22,200	11,800	9,220	5,270	3,330	2,950
6.....	3,140	14,500	13,600	21,000	10,900	24,200	25,000	11,500	8,950	5,270	3,140	2,950
7.....	3,140	14,800	12,100	16,800	10,600	22,200	27,200	11,500	8,950	5,270	3,140	2,950
8.....	3,140	12,100	10,600	22,200	10,000	21,800	29,400	11,500	8,690	5,270	3,140	2,950
9.....	3,330	11,500	7,920	22,200	9,490	22,200	25,900	11,800	8,430	5,040	3,140	2,950
10.....	3,330	9,760	9,220	20,300	8,950	23,000	22,200	11,800	8,170	5,040	2,950	3,140
11.....	3,330	9,220	9,220	18,500	8,430	23,800	21,400	12,200	7,920	5,040	2,950	3,140
12.....	3,330	8,430	8,430	23,800	8,430	24,200	21,400	13,300	7,920	5,040	2,950	3,140
13.....	3,330	7,920	9,220	50,800	8,950	23,000	20,300	13,600	7,920	5,040	2,950	3,140
14.....	3,330	7,670	10,000	96,700	13,600	20,300	19,600	13,600	7,920	4,810	2,950	3,140
15.....	3,330	7,170	10,600	179,000	22,200	17,500	18,500	13,600	7,670	4,810	2,950	3,330
16.....	3,330	6,930	13,600	159,000	37,600	18,500	17,100	13,300	7,420	4,580	2,950	3,330
17.....	3,330	6,690	15,200	112,000	73,200	18,500	16,100	13,300	7,170	4,580	2,950	3,330
18.....	3,330	7,170	21,800	63,300	137,000	18,200	15,800	13,600	6,930	4,360	2,950	3,330
19.....	4,150	7,920	18,500	43,500	87,800	16,800	15,200	13,600	6,690	4,360	2,950	3,330
20.....	5,270	6,690	18,500	35,300	53,000	15,200	14,500	13,900	6,690	4,360	2,950	3,330
21.....	6,210	7,920	32,100	30,300	55,800	13,900	15,500	13,600	6,690	4,360	2,950	3,530
22.....	7,920	7,920	63,300	26,300	50,300	14,500	16,500	13,600	6,690	4,150	2,950	3,730
23.....	8,950	7,920	80,400	25,500	39,600	15,200	12,700	13,300	6,450	4,150	2,950	1,810
24.....	10,600	7,920	57,500	26,300	41,000	15,800	12,700	13,000	6,210	4,150	2,950	5,040
25.....	10,000	10,900	40,000	24,600	42,500	16,500	11,500	12,700	5,970	4,150	2,950	5,040
26.....	9,220	14,200	35,300	22,200	44,500	25,900	12,100	12,400	5,730	3,940	2,950	5,500
27.....	9,490	27,600	30,700	20,300	44,500	34,800	12,100	12,100	5,500	3,940	2,950	5,970
28.....	9,760	25,900	24,200	18,500	50,800	33,000	11,200	12,100	5,500	3,940	2,950	6,930
29.....	9,220	18,200	22,200	17,500	.....	28,100	10,600	12,100	5,500	3,940	2,950	6,690
30.....	11,800	16,800	20,300	16,800	.....	24,200	10,600	11,500	5,270	3,940	2,950	6,450
31.....	12,400	.....	18,200	15,500	.....	22,200	.....	10,600	.....	3,940	2,950	.....
1901-2.												
1.....	5,970	5,500	13,600	12,100	7,920	49,700	14,800	12,100	15,500	6,690	4,360	2,950
2.....	4,360	5,500	22,600	11,200	8,170	40,000	15,200	14,800	15,500	6,690	4,360	2,950
3.....	4,360	5,500	44,500	11,200	8,690	34,400	15,500	16,800	15,200	7,170	4,360	2,950
4.....	4,360	5,500	47,100	11,800	9,220	30,300	15,200	16,500	15,200	10,600	4,360	2,950
5.....	4,360	5,040	49,700	12,100	10,600	35,800	15,500	15,200	15,200	16,800	4,360	2,950
6.....	4,360	4,810	45,000	12,400	14,800	37,600	16,100	14,800	14,500	17,500	4,150	2,950
7.....	4,360	4,360	39,600	18,200	18,900	33,500	16,800	16,100	13,600	15,200	4,150	2,950
8.....	4,360	4,150	37,600	29,400	26,300	30,700	28,900	16,500	13,000	12,100	4,150	2,950
9.....	4,150	4,360	35,300	33,900	34,400	27,200	43,500	16,800	12,400	11,200	4,150	2,950
10.....	3,940	4,360	61,500	24,200	44,500	24,600	40,000	16,800	12,400	9,760	4,150	2,950
11.....	3,730	4,360	79,700	23,800	70,700	22,200	33,000	17,100	12,100	9,220	3,940	2,950
12.....	3,530	3,730	50,300	20,300	65,700	21,400	30,300	17,500	10,600	10,300	3,940	2,950
13.....	3,330	3,530	33,000	18,500	55,800	21,800	26,300	16,100	10,600	11,500	3,940	2,950
14.....	3,330	3,330	24,600	16,100	44,500	22,200	23,800	16,500	19,000	12,700	3,940	2,950
15.....	3,330	3,940	20,300	15,200	34,800	22,200	20,700	16,800	9,760	12,700	3,940	2,950
16.....	3,330	4,150	17,500	12,700	32,500	22,200	20,300	18,200	9,220	12,400	3,940	2,950
17.....	3,330	5,040	15,200	12,100	30,700	22,200	21,800	17,500	9,220	12,100	3,730	2,950
18.....	3,330	3,730	14,500	12,100	29,800	22,200	23,000	19,600	8,950	11,500	3,730	2,950
19.....	3,330	3,730	13,900	11,800	31,200	26,300	24,200	22,200	8,690	11,200	3,730	2,950
20.....	3,330	4,360	13,300	11,200	31,600	26,300	25,500	24,200	8,430	10,600	3,730	2,950
21.....	3,330	4,360	12,100	10,900	25,500	25,900	24,200	24,200	8,170	10,000	3,730	3,140
22.....	3,330	5,500	11,500	10,600	23,800	25,900	22,200	23,800	7,920	10,000	3,730	3,140
23.....	3,330	9,220	10,300	10,000	22,200	25,000	20,300	23,000	7,920	9,490	3,530	3,330
24.....	3,330	30,300	10,600	9,760	20,300	24,200	17,800	21,800	7,670	8,950	3,530	3,330
25.....	3,330	26,300	10,900	9,220	22,200	21,800	16,800	19,600	7,420	8,430	3,530	3,330
26.....	3,330	18,500	11,200	8,690	30,300	21,000	16,100	17,500	7,170	7,420	3,530	3,330
27.....	3,330	15,200	11,200	8,170	42,500	20,300	14,500	17,500	6,930	6,690	3,530	3,330
28.....	3,330	11,800	11,800	7,920	47,600	18,500	13,000	18,200	6,690	5,970	3,330	3,330
29.....	4,150	10,300	12,100	7,670	.....	17,500	12,100	18,200	6,690	5,270	3,330	3,330
30.....	4,810	10,000	12,400	7,420	.....	17,800	12,100	16,800	6,690	4,580	3,330	3,330
31.....	5,500	.....	12,700	7,420	.....	18,500	.....	15,500	.....	4,360	3,330	.....

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1902-3.												
1.	3,330	3,330	21,400	24,600	52,400	14,800	16,800	10,600	12,400	6,690	4,150	3,530
2.	3,330	3,330	40,000	30,700	41,500	13,900	19,200	11,200	12,700	6,450	4,150	3,940
3.	3,330	4,360	47,100	37,600	30,700	13,300	14,500	11,500	12,100	6,450	3,940	4,150
4.	2,950	6,450	45,000	35,300	25,500	12,700	13,300	11,800	11,200	6,450	3,940	4,360
5.	2,950	5,500	72,000	33,000	22,200	12,100	12,700	12,100	10,300	6,210	3,940	4,580
6.	2,950	4,810	124,000	28,500	20,300	12,100	12,100	12,100	9,490	6,210	3,940	4,810
7.	2,950	6,450	92,600	25,000	18,200	12,100	12,100	12,400	9,490	5,970	3,940	5,040
8.	2,950	8,170	55,800	22,200	19,900	12,100	12,700	12,100	9,490	5,970	3,940	5,270
9.	2,950	14,800	63,300	19,900	21,400	12,100	14,200	11,500	10,000	5,970	3,940	5,270
10.	2,950	22,600	73,200	16,800	22,600	12,400	13,600	11,500	10,300	5,970	3,940	5,500
11.	2,950	16,800	86,400	16,100	36,700	13,000	13,300	11,500	10,000	5,730	3,730	5,730
12.	2,950	16,500	64,500	15,200	39,600	21,800	12,400	11,800	10,000	5,500	3,730	6,210
13.	3,140	16,500	49,200	13,600	33,000	33,000	11,800	11,800	9,760	5,270	3,730	6,450
14.	3,140	13,300	41,000	13,000	29,800	26,300	11,800	11,800	9,220	5,270	3,730	6,690
15.	3,330	15,200	33,000	12,700	23,800	26,300	10,600	12,100	8,430	5,270	3,530	6,210
16.	3,330	18,200	27,600	12,100	18,500	26,300	10,000	12,100	8,430	5,270	3,530	5,500
17.	3,330	22,200	23,000	11,500	16,800	21,800	9,760	12,100	8,430	5,270	3,530	4,580
18.	3,330	41,000	19,900	10,900	16,100	18,900	9,490	12,400	8,170	5,270	3,530	4,360
19.	3,330	48,100	17,500	10,300	15,500	16,100	9,220	12,100	7,920	5,040	3,330	4,150
20.	3,330	53,000	15,500	11,500	14,800	14,800	8,950	11,500	7,420	4,810	3,330	3,940
21.	3,330	35,300	16,800	13,600	14,200	13,300	8,690	11,200	7,170	4,810	3,330	5,730
22.	3,330	27,600	18,900	40,000	16,800	12,700	9,760	10,600	6,930	4,580	3,330	3,730
23.	3,330	22,200	20,300	73,900	18,900	12,100	10,100	10,300	6,930	4,580	3,730	3,730
24.	3,330	17,500	23,800	79,700	17,800	12,100	11,200	10,000	6,930	4,360	4,150	3,730
25.	3,330	15,200	27,600	103,000	18,500	12,400	11,500	9,760	6,690	4,360	4,580	3,530
26.	3,330	13,300	28,100	188,000	17,800	13,000	11,800	9,760	6,690	4,150	4,150	3,530
27.	3,330	13,000	29,800	146,000	16,800	13,000	12,100	9,760	6,450	4,150	4,360	3,330
28.	3,330	13,300	27,200	96,000	16,100	13,300	12,100	10,600	6,690	4,150	3,940	3,330
29.	3,330	13,600	24,200	62,100	.....	15,800	12,100	10,900	6,930	4,150	3,730	3,330
30.	3,330	14,200	21,800	51,900	.....	18,900	11,200	11,500	6,930	4,150	3,530	3,330
31.	3,330	.....	20,300	53,600	.....	17,800	.....	11,800	.....	4,150	3,330	.....
1903-4.												
1.	3,330	3,330	17,500	11,20	14,200	58,000	38,600	24,200	13,000	6,690	4,580	3,330
2.	3,330	3,730	16,500	11,200	14,200	65,700	30,700	22,600	13,000	6,450	4,580	3,330
3.	3,330	4,360	15,200	11,200	13,900	67,000	30,300	21,400	13,000	6,450	4,360	3,330
4.	3,330	4,360	13,900	11,500	13,600	69,400	29,800	20,300	12,700	6,210	4,360	3,330
5.	3,940	4,580	16,100	11,500	13,300	70,700	28,100	18,900	12,400	6,210	4,360	3,330
6.	4,810	4,810	15,500	11,500	15,200	60,300	26,800	18,200	12,100	5,970	4,150	3,330
7.	8,170	6,930	12,100	11,800	16,800	49,200	26,300	17,500	11,800	5,730	4,150	3,330
8.	7,920	10,600	11,500	11,800	18,500	61,500	26,300	16,800	11,200	5,730	4,150	3,330
9.	6,690	10,300	10,600	12,100	18,500	81,100	25,000	16,100	10,600	5,730	4,150	3,330
10.	5,730	10,000	10,000	22,200	18,500	97,400	27,600	16,100	10,300	5,500	3,940	3,330
11.	5,500	15,800	9,490	35,300	22,200	70,100	30,300	16,100	10,000	5,500	3,940	3,330
12.	5,500	28,900	9,490	62,100	37,600	50,800	33,900	16,100	9,760	5,500	3,940	3,330
13.	5,270	44,500	9,760	53,000	47,600	47,100	38,100	16,100	9,490	5,500	3,940	3,330
14.	5,040	29,800	9,760	42,500	41,500	43,500	40,000	16,100	9,220	5,500	3,940	3,330
15.	4,810	43,500	10,300	35,300	51,900	48,100	37,600	15,800	9,220	5,500	3,730	3,330
16.	4,580	45,000	10,900	40,000	89,100	51,900	32,500	15,800	8,950	5,730	3,730	3,330
17.	4,580	32,500	16,100	37,600	124,000	42,500	27,600	15,800	8,690	5,970	3,730	3,330
18.	4,360	25,900	16,100	37,200	97,400	41,500	23,800	15,800	8,430	5,970	3,730	3,330
19.	4,150	19,900	16,100	35,800	53,000	42,000	22,200	16,800	8,170	5,730	3,730	3,330
20.	4,105	19,900	15,800	34,400	40,000	43,500	21,800	18,200	7,920	5,730	3,730	3,330
21.	3,940	27,200	15,500	28,500	36,200	45,000	21,400	16,800	7,920	5,500	3,730	3,330
22.	3,730	40,500	15,200	29,400	36,700	42,500	21,000	16,800	7,670	5,500	3,730	3,330
23.	3,730	55,800	14,800	28,500	57,500	40,000	20,300	16,100	7,420	5,500	3,730	3,330
24.	3,730	51,900	14,200	27,600	70,100	35,800	18,900	15,500	7,420	5,270	3,530	3,330
25.	3,530	49,700	13,600	26,800	66,300	31,600	17,500	14,800	7,170	5,270	3,530	3,330
26.	3,530	33,000	13,300	26,300	58,600	31,200	18,900	14,200	7,170	5,040	3,530	3,330
27.	3,330	27,200	13,000	22,200	61,500	30,700	20,300	13,900	6,930	5,040	3,530	3,330
28.	3,330	24,200	12,400	18,200	66,800	30,700	21,400	13,600	6,930	5,040	3,530	3,330
29.	3,330	21,000	11,800	15,500	59,800	36,700	22,200	13,300	6,690	4,810	3,530	3,330
30.	3,330	18,900	11,500	14,800	.....	49,700	23,000	13,000	6,690	4,810	3,530	3,330
31.	3,330	.....	11,200	14,200	.....	46,600	.....	13,000	.....	4,580	3,530	.....

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.	3,140	3,140	6,690	69,400	16,100	10,600	21,800	7,170	7,920	5,040	2,950	2,400
2.	3,140	3,330	7,170	41,500	15,800	10,600	21,000	6,690	7,920	4,810	2,950	2,400
3.	3,140	3,330	6,930	30,300	15,800	9,760	20,300	6,930	7,920	4,580	2,950	2,400
4.	3,140	3,330	6,450	24,200	15,500	9,220	19,600	6,930	8,690	4,580	2,950	2,400
5.	3,140	3,330	5,970	22,600	14,200	10,300	19,200	6,690	9,220	4,580	2,950	2,400
6.	3,140	3,330	5,500	19,600	13,000	8,690	18,900	6,210	9,490	4,580	2,950	2,400
7.	3,140	3,330	5,270	17,800	12,100	8,170	18,200	6,210	10,600	4,360	2,760	2,400
8.	3,140	3,730	5,270	15,800	10,600	7,670	16,800	6,210	10,300	4,360	2,760	2,400
9.	3,140	3,530	5,040	14,500	10,600	7,670	15,200	6,450	10,000	4,150	2,760	2,400
10.	3,140	3,530	5,500	13,000	10,000	7,670	13,900	10,600	8,950	4,150	2,760	2,400
11.	3,530	3,330	7,420	12,100	9,490	7,670	13,000	12,100	8,430	3,730	2,760	2,400
12.	4,580	3,330	10,300	10,600	8,950	7,420	12,100	11,800	7,920	3,730	2,760	2,400
13.	5,270	3,330	14,200	10,000	8,170	6,930	10,900	12,400	7,420	3,730	2,760	2,400
14.	4,580	3,330	24,200	10,300	7,920	6,930	10,600	11,800	6,930	3,730	2,760	2,400
15.	3,730	3,730	28,100	11,200	7,670	6,450	10,600	11,200	6,930	3,940	2,760	2,400
16.	4,150	3,940	31,200	15,200	7,670	6,450	10,300	10,600	6,690	3,940	2,760	2,400
17.	4,580	4,580	24,200	15,800	7,670	6,930	10,300	10,000	5,970	3,940	2,760	2,400
18.	5,970	5,500	19,200	13,900	7,920	6,690	9,760	9,490	5,730	4,150	2,760	2,400
19.	5,040	6,690	19,600	13,600	8,430	6,930	9,490	8,950	5,500	4,150	2,760	2,400
20.	4,810	6,690	16,800	13,600	9,490	7,420	9,490	8,430	5,270	4,150	2,760	2,400
21.	4,580	6,690	13,600	13,000	10,300	9,760	9,490	8,430	5,040	4,360	2,760	2,400
22.	4,150	7,920	13,000	13,600	10,900	9,220	8,690	8,690	5,040	3,730	2,760	2,400
23.	3,940	7,420	12,700	16,100	11,500	22,200	8,430	9,220	5,040	3,330	2,760	2,400
24.	3,730	8,430	14,500	23,400	14,200	21,800	7,920	10,600	5,040	2,950	2,760	2,400
25.	3,530	6,930	18,200	28,100	13,600	25,900	8,170	10,900	5,040	2,950	2,580	2,400
26.	3,330	6,930	22,200	27,600	13,000	33,000	8,170	10,000	5,040	2,950	2,400	2,760
27.	3,330	6,690	18,200	26,300	12,100	47,600	8,170	9,490	5,500	2,950	2,400	2,950
28.	3,330	6,450	15,800	23,400	11,200	47,100	7,670	9,220	5,500	2,950	2,400	3,140
29.	3,140	6,450	17,800	21,000	.....	37,600	7,670	8,950	5,500	2,950	2,400	3,330
30.	3,140	6,690	37,600	19,200	.....	30,700	7,420	8,430	5,500	2,950	2,400	3,330
31.	3,140	.....	69,400	16,800	.....	24,200	.....	7,920	.....	2,950	2,400	.....
1905-6.												
1.	3,330	4,810	10,600	21,800	16,100	39,600	17,500	13,000	18,900	7,920	4,150	2,950
2.	3,330	4,360	11,800	20,300	16,100	32,100	20,300	11,800	15,500	7,420	3,940	2,950
3.	3,330	4,360	13,000	17,500	15,200	25,900	17,500	11,800	13,900	6,930	3,940	2,950
4.	3,330	4,150	13,600	14,800	14,500	22,600	15,800	10,600	13,000	6,930	3,730	2,950
5.	3,330	3,940	13,600	13,600	14,200	20,300	14,500	10,600	14,500	6,930	3,730	2,950
6.	3,330	3,940	13,000	13,600	13,600	19,200	13,600	10,600	13,600	6,930	3,730	2,950
7.	3,940	3,940	12,400	13,600	13,000	18,500	13,000	10,600	14,200	6,690	3,730	2,760
8.	5,500	3,940	12,400	13,600	11,800	18,500	13,300	9,490	16,100	6,690	3,730	2,760
9.	8,430	3,730	12,400	14,800	10,600	17,500	12,100	9,220	15,500	6,690	3,530	2,760
10.	6,930	3,730	11,500	19,600	10,600	16,800	13,000	9,220	16,100	6,450	3,530	2,760
11.	5,970	3,530	10,600	19,600	10,000	16,800	12,100	9,220	16,800	5,970	3,330	2,760
12.	5,040	3,530	7,920	19,600	10,000	16,800	11,500	9,220	15,500	5,500	3,330	2,760
13.	4,360	3,330	8,430	22,600	9,490	14,800	10,600	8,950	14,800	5,270	3,140	2,950
14.	4,360	3,330	7,920	28,500	8,430	13,600	10,000	8,950	13,600	5,040	3,140	4,810
15.	6,210	3,330	7,920	28,500	8,430	13,000	9,760	8,430	13,300	5,040	3,140	3,940
16.	6,210	3,330	7,420	28,100	10,600	11,800	9,490	10,600	13,300	4,810	3,140	5,040
17.	6,210	3,330	7,420	37,600	10,600	10,600	9,490	11,200	16,800	4,810	2,950	5,040
18.	6,210	3,330	7,920	54,100	11,200	10,600	9,490	10,000	16,800	4,810	2,950	4,360
19.	6,210	3,730	8,690	45,500	13,600	10,000	9,220	9,490	14,800	4,580	2,950	3,330
20.	6,210	4,810	10,600	34,800	25,000	10,000	9,220	9,490	13,000	4,580	2,950	3,140
21.	5,500	7,920	13,600	27,600	33,000	11,200	9,220	8,950	11,800	4,580	2,950	3,140
22.	5,270	7,420	14,800	22,600	44,500	13,000	10,000	10,000	10,600	4,580	2,950	2,950
23.	5,040	6,690	13,000	19,600	41,500	13,000	10,000	10,000	10,000	4,360	2,950	2,950
24.	4,580	5,500	11,800	22,600	41,500	13,000	10,000	11,800	9,490	4,360	2,950	2,760
25.	4,580	6,210	11,200	31,600	51,900	13,000	10,300	11,200	9,220	4,360	2,950	2,950
26.	4,580	6,930	10,600	29,400	56,300	13,000	10,300	10,900	7,920	4,360	2,950	3,140
27.	7,420	7,420	15,500	28,500	47,600	13,000	11,800	10,600	7,920	4,360	3,140	2,950
28.	7,420	7,920	19,600	26,800	46,600	13,000	11,800	10,600	7,920	4,150	3,330	2,950
29.	6,930	7,920	14,800	20,300	.....	11,800	13,300	11,800	7,920	4,150	3,330	2,760
30.	5,500	9,220	16,800	18,500	.....	11,200	13,300	27,600	7,920	4,150	2,950	2,760
31.	5,500	.....	19,600	17,500	.....	11,800	.....	22,600	.....	4,150	2,950	.....

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.	2,760	3,730	9,220	20,300	60,300	16,100	15,800	10,600	7,920	5,500	3,530	3,140
2.	2,760	4,580	8,430	18,500	67,000	19,200	15,500	10,000	7,920	5,500	3,530	3,140
3.	2,580	4,150	7,920	19,600	75,800	17,800	15,500	9,760	7,670	5,500	3,530	2,950
4.	2,760	3,730	7,420	54,100	93,300	16,100	15,500	9,490	7,670	5,970	3,530	2,950
5.	2,760	4,150	7,420	106,000	108,000	15,500	14,200	9,220	7,420	5,500	3,330	2,950
6.	3,140	4,580	7,170	128,000	182,000	14,200	15,500	9,220	7,420	5,500	3,330	2,950
7.	3,140	5,500	8,690	70,700	157,000	13,600	34,800	8,950	7,170	5,500	3,330	2,950
8.	2,950	11,200	16,100	40,000	115,000	13,600	89,100	8,950	7,170	5,500	3,330	2,950
9.	2,760	27,200	14,500	29,400	70,700	13,600	90,500	8,950	7,170	5,040	4,580	2,950
10.	2,760	18,200	15,500	23,800	33,000	13,000	67,600	8,950	7,170	4,810	4,360	2,950
11.	2,760	16,100	16,800	20,300	37,600	15,500	50,300	9,220	6,930	4,580	3,940	2,950
12.	2,760	16,800	17,100	17,800	32,500	14,800	41,500	10,600	6,930	4,580	3,730	2,950
13.	2,760	13,600	15,200	16,800	27,600	13,600	34,800	10,300	8,690	4,360	3,330	2,950
14.	2,950	20,300	13,600	15,500	24,600	13,600	28,500	9,760	8,690	4,360	3,330	2,760
15.	3,140	28,900	12,400	13,600	22,200	12,400	27,600	9,490	8,430	4,360	3,330	2,760
16.	3,530	37,200	13,900	12,400	20,300	11,800	24,200	8,950	8,170	4,360	3,330	2,950
17.	4,360	44,000	15,200	11,200	18,900	11,500	20,300	8,690	8,170	4,360	3,330	2,950
18.	7,920	39,600	17,500	10,600	18,200	14,200	18,900	8,950	7,920	4,150	3,140	3,140
19.	7,920	43,000	16,500	10,600	16,100	28,900	18,500	9,220	7,670	4,150	3,140	3,330
20.	6,930	32,100	20,300	10,600	15,200	33,000	18,200	10,000	7,170	4,150	3,140	3,140
21.	6,450	24,200	33,000	10,600	14,200	37,600	18,200	10,600	6,930	4,150	2,950	3,140
22.	5,500	24,200	33,000	10,600	13,600	32,100	17,800	10,000	6,690	3,940	2,950	2,950
23.	5,040	23,000	26,300	10,300	13,600	27,200	16,800	9,490	6,450	3,940	2,950	2,760
24.	4,580	19,200	23,800	10,300	13,600	26,300	16,100	9,490	6,210	3,940	2,950	2,760
25.	5,150	16,500	22,600	10,300	13,600	24,200	15,500	8,950	6,210	3,940	2,950	2,760
26.	3,940	14,200	28,900	12,400	13,600	22,200	14,800	8,690	6,210	3,730	2,950	2,760
27.	3,730	13,000	30,700	13,600	18,500	19,900	14,200	8,430	5,970	3,730	3,330	2,760
28.	4,150	11,800	31,200	15,500	16,800	17,500	13,000	8,170	5,730	3,730	3,330	2,760
29.	4,360	10,600	24,200	23,000	-----	16,500	14,800	7,920	5,730	3,730	3,330	2,760
30.	4,150	10,000	24,200	42,500	-----	16,100	11,200	7,920	5,730	3,530	3,140	2,760
31.	3,940	-----	21,000	54,100	-----	15,800	-----	7,920	-----	3,530	3,140	-----
1907-8.												
1.	3,140	3,530	12,400	35,300	10,600	11,200	14,800	11,800	9,760	7,920	4,360	3,940
2.	3,330	3,330	10,600	34,400	10,300	12,100	14,800	12,100	9,490	7,920	4,360	3,940
3.	3,330	3,140	9,490	31,200	9,760	12,100	14,500	12,100	9,490	7,920	4,360	3,330
4.	3,530	3,940	8,690	27,200	9,490	11,800	14,500	12,100	9,490	7,670	4,360	3,330
5.	3,330	3,730	8,430	25,000	10,600	11,200	14,500	11,800	9,490	7,420	4,360	3,330
6.	3,330	3,530	8,690	20,300	14,800	10,900	13,600	11,500	9,490	7,170	4,360	3,330
7.	3,140	3,140	8,430	21,800	18,500	10,600	12,700	10,900	9,220	6,930	4,360	3,140
8.	3,140	3,140	8,430	19,900	23,400	10,000	12,100	11,800	9,220	6,690	4,150	3,330
9.	2,950	2,950	10,600	22,200	21,000	9,490	11,200	12,400	9,220	6,450	3,940	3,330
10.	2,760	2,950	10,300	33,000	20,700	9,490	10,900	12,100	9,220	6,210	3,730	3,330
11.	2,760	2,950	11,800	32,500	18,500	9,490	10,900	11,200	9,220	5,970	3,730	3,330
12.	2,760	2,760	14,500	27,600	17,100	9,490	10,600	10,900	9,490	5,730	3,530	3,330
13.	2,760	2,760	22,200	24,200	16,100	10,000	11,500	10,600	9,760	5,500	3,530	3,330
14.	2,760	2,950	39,600	22,600	15,500	10,000	11,200	10,300	10,000	5,500	3,530	3,140
15.	2,760	3,140	42,500	22,200	14,200	14,800	11,800	10,000	9,760	5,500	3,530	3,140
16.	2,760	3,730	30,300	22,200	13,300	34,400	11,500	11,500	9,490	5,500	3,530	3,140
17.	2,760	4,150	22,200	20,300	13,600	49,200	11,800	14,500	9,220	5,500	3,530	3,140
18.	2,760	3,730	18,500	18,200	14,200	51,900	12,100	15,200	8,950	5,270	3,330	3,140
19.	2,760	3,330	16,800	16,800	13,600	41,500	13,300	16,500	8,950	5,270	3,330	3,140
20.	2,760	3,730	17,500	17,800	12,700	30,300	13,600	18,900	8,950	5,040	3,330	3,140
21.	2,760	5,040	20,300	25,500	11,800	24,200	14,200	19,200	9,220	5,040	3,330	2,950
22.	2,760	9,220	34,400	25,000	11,200	20,300	14,200	17,100	12,100	4,810	3,330	2,950
23.	2,580	8,430	70,700	21,400	10,600	17,800	13,300	15,500	13,600	4,810	3,330	2,950
24.	2,580	13,600	108,000	19,600	10,600	16,100	12,400	13,900	12,100	4,810	3,330	2,950
25.	2,580	22,200	96,000	17,100	10,000	15,200	16,800	13,000	10,600	4,580	3,330	2,950
26.	2,580	35,300	115,000	15,200	9,760	14,800	18,900	12,100	9,760	4,580	3,330	2,950
27.	2,580	25,500	139,000	14,500	9,490	14,500	16,500	11,200	9,490	4,580	3,330	2,950
28.	2,580	19,900	142,000	13,000	10,300	14,200	14,500	11,200	9,490	4,360	3,330	2,760
29.	2,580	16,800	94,600	11,800	10,900	13,900	13,300	10,900	8,950	4,360	3,330	2,760
30.	2,760	13,900	57,500	11,800	-----	13,300	12,400	10,300	8,170	4,360	3,940	2,760
31.	3,330	40,500	11,200	-----	-----	13,000	-----	10,000	-----	4,360	4,150	-----

Daily discharge, in second-feet, of Willamette River at Albany, Oreg., 1878-1880 and 1892-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	2,760	8,170	8,170	16,800	16,800	35,800	11,200	8,950	14,500	5,270	3,730	3,140
2.....	2,760	8,430	7,670	14,500	15,800	34,800	12,400	8,690	14,500	5,040	3,730	3,140
3.....	2,950	7,420	7,420	13,600	17,800	36,200	13,600	8,690	14,500	5,040	3,530	3,140
4.....	2,950	6,930	6,930	14,800	20,700	34,800	13,000	9,490	13,300	5,040	3,530	2,950
5.....	2,950	6,450	6,450	27,600	21,000	33,000	12,400	10,900	12,400	5,040	3,530	2,950
6.....	2,950	5,970	5,970	35,300	21,000	31,600	12,100	10,600	11,500	5,040	3,530	2,950
7.....	2,950	5,500	5,730	46,000	21,000	25,900	11,800	10,000	10,300	6,450	3,530	2,950
8.....	2,950	5,270	5,730	54,100	20,300	22,600	11,200	9,220	10,000	8,430	3,530	2,950
9.....	2,950	5,040	5,730	60,300	18,900	21,000	10,600	8,690	8,950	7,420	3,530	2,950
10.....	2,950	4,810	5,730	50,300	18,900	21,400	10,300	8,690	8,430	6,210	3,530	2,950
11.....	2,950	4,580	5,500	35,300	19,200	19,600	10,300	8,950	8,430	5,500	3,330	2,950
12.....	2,950	4,360	5,500	25,900	19,200	18,500	10,000	9,490	8,170	5,500	3,330	2,950
13.....	2,950	4,360	5,730	20,300	20,300	16,500	9,760	9,220	8,170	5,500	3,330	2,950
14.....	3,330	4,360	7,170	18,200	23,400	15,500	9,490	8,690	7,920	5,500	3,330	2,950
15.....	6,930	4,150	7,920	16,800	24,600	14,800	9,220	8,430	7,670	5,270	3,330	2,950
16.....	6,690	4,150	7,670	44,500	25,500	14,200	9,220	8,170	7,420	5,040	3,330	2,950
17.....	13,900	4,150	7,420	78,400	29,800	13,900	8,950	7,920	7,420	4,810	3,330	2,950
18.....	10,000	4,150	6,930	94,000	49,200	14,500	8,950	7,920	7,420	4,810	3,330	2,950
19.....	7,920	4,580	6,450	89,100	49,200	14,200	8,950	7,670	7,170	4,580	3,330	2,950
20.....	6,930	6,690	5,970	92,600	48,100	13,600	8,690	7,420	7,170	4,580	3,330	2,950
21.....	6,690	13,600	5,730	97,400	45,500	13,300	8,430	7,420	6,930	4,580	3,330	2,950
22.....	6,690	16,100	5,500	115,000	43,000	12,700	8,430	7,420	6,450	4,580	3,330	2,950
23.....	7,920	16,800	5,970	115,000	35,300	12,100	7,920	7,420	6,450	4,360	3,330	2,950
24.....	7,920	19,600	10,300	80,400	29,400	11,200	7,920	7,170	6,210	4,360	3,330	2,950
25.....	6,690	18,500	16,100	50,300	34,400	10,900	7,920	6,930	5,970	4,360	3,330	2,950
26.....	6,450	15,800	14,800	37,200	42,500	10,600	7,920	6,930	5,970	4,150	3,330	2,950
27.....	6,210	13,600	22,600	29,800	38,600	10,300	7,670	7,170	5,730	3,940	3,330	2,950
28.....	5,970	11,800	21,800	25,000	35,300	10,300	8,430	8,690	5,730	3,940	3,330	2,950
29.....	5,970	10,600	21,400	21,400	.....	10,600	10,000	10,900	5,500	3,940	3,140	2,950
30.....	5,730	15,200	27,600	18,900	.....	10,900	9,760	12,100	5,500	3,730	3,140	3,330
31.....	5,730	.....	21,000	17,500	.....	11,200	.....	12,400	.....	3,730	3,140	.....
1909-10.												
1.....	3,940	5,040	42,500	18,200	26,300	51,900	10,600	8,950	6,210	4,580	3,140	2,760
2.....	4,150	12,400	41,000	16,100	23,400	68,200	10,600	8,690	5,970	4,360	2,950	2,760
3.....	3,940	10,600	33,000	13,600	20,300	90,500	11,200	8,430	5,970	4,150	2,950	2,760
4.....	3,730	11,800	26,300	12,400	17,500	79,100	13,000	8,950	5,730	3,940	2,950	2,950
5.....	3,530	8,950	22,200	11,200	16,100	64,500	12,400	9,760	5,500	3,940	2,950	2,950
6.....	3,330	7,920	20,300	10,600	15,500	46,100	11,800	10,000	5,500	4,150	2,950	2,760
7.....	3,330	7,920	18,500	10,000	14,800	33,000	12,100	9,490	5,500	4,150	2,950	2,760
8.....	4,360	8,170	20,300	12,400	14,200	30,300	11,800	9,220	5,500	3,940	2,950	2,760
9.....	3,530	8,690	28,500	13,600	13,600	25,900	11,500	8,950	5,270	3,940	2,950	2,760
10.....	3,330	9,490	44,000	13,300	13,000	22,600	11,500	8,950	5,270	3,940	2,950	2,580
11.....	3,330	12,700	40,000	12,700	13,900	20,700	12,100	13,000	5,040	3,730	2,950	2,580
12.....	3,330	16,100	37,600	11,500	14,500	19,600	11,800	15,800	5,270	3,730	2,950	2,580
13.....	3,330	13,300	46,000	10,600	15,200	18,900	12,400	13,900	5,970	3,530	2,950	2,580
14.....	3,330	11,800	55,800	10,600	20,300	19,200	12,100	12,100	5,500	3,730	2,950	2,580
15.....	3,330	11,200	46,600	10,900	26,800	19,200	11,800	11,200	5,270	3,730	2,950	2,580
16.....	3,140	9,490	36,700	10,300	25,000	19,200	10,600	10,300	5,040	3,730	2,950	2,580
17.....	3,140	8,430	27,600	10,000	21,400	17,800	10,000	9,490	5,040	3,530	2,760	2,580
18.....	2,950	7,920	23,000	10,000	18,500	16,800	10,000	8,690	5,270	3,530	2,760	2,580
19.....	3,140	8,690	19,600	11,500	22,200	16,500	10,000	8,430	5,270	3,530	2,760	2,760
20.....	3,530	23,000	17,800	18,200	32,500	17,500	10,600	7,920	5,040	3,530	2,760	2,760
21.....	4,150	49,200	16,100	16,800	30,700	16,500	11,200	7,670	5,040	3,330	2,760	2,950
22.....	4,810	54,600	14,500	16,100	28,500	15,500	10,900	7,420	5,500	3,330	2,760	3,330
23.....	4,810	66,300	13,300	21,000	25,500	15,800	10,600	7,170	5,500	3,330	2,760	3,330
24.....	4,810	160,000	12,400	31,200	28,500	19,900	10,300	7,170	5,270	3,330	2,760	2,950
25.....	4,360	168,000	11,800	34,800	33,900	18,200	10,300	7,170	5,270	3,330	2,760	2,950
26.....	3,730	123,000	11,200	31,600	45,000	16,100	10,900	7,170	5,270	3,330	2,760	2,950
27.....	3,330	82,400	10,900	28,500	44,500	14,500	10,600	7,170	4,810	3,330	2,760	2,760
28.....	3,330	44,500	10,600	25,900	44,500	13,600	10,300	6,930	4,580	3,140	2,760	2,760
29.....	3,530	37,600	10,000	33,000	.....	12,700	9,760	6,930	4,580	3,140	2,760	2,760
30.....	3,730	36,200	9,760	33,900	.....	11,800	9,220	6,690	4,580	3,140	2,760	2,760
31.....	4,380	.....	11,200	28,500	.....	11,200	.....	6,450	.....	3,140	2,760	.....

NOTE.—Daily discharge determined from a rating curve well defined between 2,700 and 13,600 second-feet and fairly well defined above. Measurements made in 1911 and 1912 indicate that the curve used gives results 5 to 10 per cent too large between gage heights 10 and 20 feet and somewhat too small above 25 feet, but the effect on any yearly or monthly mean is slight. Discharge estimates for 1878 to 1880 are subject to much uncertainty, as the permanence of gage and channel since that time is questionable.

Monthly discharge of Willamette River at Albany, Oreg., for 1878-1880 and 1892-1910.

[Drainage area, 4,860 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1878-79.							
November 24-30.....	14,200	6,690	9,030	1.86	0.83	125,000	B.
December.....	30,700	4,580	12,700	2.61	3.01	781,000	B.
January.....	51,400	3,730	13,600	2.80	3.23	836,000	B.
February.....	55,800	7,670	28,300	5.82	6.06	1,570,000	B.
March.....	109,000	21,000	43,000	8.85	10.20	2,640,000	B.
April.....	36,700	11,200	20,500	4.22	4.71	1,220,000	B.
May.....	33,500	11,200	18,900	3.89	4.48	1,160,000	B.
June.....	21,800	6,210	11,000	2.26	2.52	655,000	B.
July.....	6,210	3,330	4,750	.977	1.13	292,000	B.
August.....	3,330	2,220	2,710	.558	.64	167,000	C.
September.....	4,360	1,870	2,310	.475	.53	137,000	C.
The period.....						9,580,000	
1879-80.							
October.....	6,690	3,330	4,560	.938	1.08	280,000	B.
November.....	37,600	2,950	13,400	2.76	3.08	797,000	B.
December.....	116,000	8,430	34,000	7.00	8.07	2,090,000	B.
January.....	112,000	18,500	48,000	9.88	11.39	2,950,000	B.
February.....	47,100	9,220	17,000	3.50	3.78	978,000	B.
March.....	16,800	7,920	12,400	2.55	2.94	762,000	B.
April.....	33,000.	15,200	22,200	4.57	5.10	1,320,000	B.
The period.....						9,180,000	
1892.							
January 21-31.....	17,500	13,600	14,900	3.07	1.26	325,000	A.
February.....	16,800	9,760	12,500	2.57	2.77	719,000	A.
March.....	20,700	11,800	14,500	2.98	3.44	892,000	A.
April.....	26,300	16,100	20,500	4.22	4.71	1,220,000	A.
May.....	19,900	13,600	16,100	3.31	3.82	990,000	A.
June.....	13,600	6,690	9,830	2.02	2.25	585,000	A.
The period.....						4,730,000	
1892-93.							
November.....	27,600	2,950	7,360	1.51	1.68	438,000	A.
December.....	73,200	5,500	18,800	3.87	4.46	1,160,000	A.
January.....	33,500	7,170	11,900	2.45	2.82	732,000	A.
February.....	73,200	6,930	25,500	5.25	5.47	1,420,000	A.
March.....	26,800	13,600	17,500	3.60	4.15	1,080,000	A.
April.....	46,600	17,500	26,700	5.49	6.12	1,590,000	A.
May.....	30,300	14,500	22,700	4.67	5.38	1,400,000	A.
June.....	15,800	8,690	12,400	2.55	2.84	738,000	A.
July.....	8,690	4,580	6,380	1.31	1.51	392,000	A.
August.....	4,580	2,950	3,520	.724	.83	216,000	A.
September.....	5,730	2,950	3,770	.776	.87	224,000	B.
The period.....						9,390,000	
1893-94.							
October.....	58,600	5,500	16,400	3.37	3.88	1,010,000	A.
November.....	89,800	6,690	18,700	3.85	4.30	1,110,000	A.
January.....	157,000	15,500	53,800	11.1	12.80	3,310,000	B.
February.....	40,500	16,800	25,600	5.27	5.49	1,420,000	A.
March.....	123,000	24,200	50,500	10.4	11.99	3,110,000	B.
April.....	42,500	18,500	24,900	5.12	5.71	1,480,000	A.
May.....	31,600	14,500	20,200	4.16	4.80	1,240,000	A.
June.....	35,800	12,100	21,000	4.32	4.82	1,250,000	A.
July.....	11,800	5,500	8,560	1.76	2.03	526,000	A.
August.....	5,730	4,150	4,870	1.00	1.15	299,000	B.
September.....	5,040	3,940	4,270	.879	.98	254,000	B.
1895.							
January.....	79,700	10,300	32,300	6.65	7.67	1,990,000	B.
February.....	18,500	7,670	11,500	2.37	2.47	639,000	A.
March.....	42,500	6,930	15,100	3.11	3.58	928,000	A.
April.....	26,300	13,600	17,000	3.50	3.90	1,010,000	A.
May.....	39,100	9,220	16,900	3.48	4.01	1,040,000	A.
June.....	16,800	5,500	9,050	1.86	2.08	539,000	A.
July.....	5,500	3,330	4,460	.918	1.06	274,000	B.
August.....	3,330	2,950	3,050	.628	.72	188,000	B.
September.....	3,730	2,950	3,220	.663	.74	192,000	B.
The period.....						6,800,000	

Monthly discharge of Willamette River at Albany, Oreg., for 1878-1880 and 1892-1910—Con.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1895-96.							
October.....	2,950	2,220	2,710	0.558	0.64	167,000	B.
November.....	6,690	2,220	3,230	.665	.74	192,000	B.
December.....	65,700	5,500	20,000	4.12	4.75	1,230,000	A.
January.....	128,000	15,500	46,100	9.49	10.94	2,830,000	B.
February.....	47,600	11,200	18,300	3.77	4.07	1,050,000	A.
March.....	90,900	15,500	27,300	5.62	6.48	1,680,000	A.
April.....	66,000	14,800	28,900	5.95	6.64	1,720,000	A.
May.....	60,900	17,800	28,900	5.95	6.86	1,780,000	A.
June.....	22,200	12,100	15,000	3.09	3.55	893,000	A.
July.....	11,800	5,040	7,590	1.56	1.80	467,000	A.
August.....	5,040	3,330	3,910	.805	.93	240,000	B.
September.....	4,810	3,330	3,570	.735	.82	212,000	B.
The year.....	128,000	2,220	17,300	3.55	48.12	12,500,000	
1896-97.							
October.....	3,940	2,950	3,180	.654	.75	196,000	B.
November.....	160,000	6,690	42,000	8.64	9.64	2,500,000	B.
December.....	77,100	14,200	30,500	6.28	7.24	1,880,000	A.
January.....	36,700	11,200	17,400	3.58	4.13	1,070,000	A.
February.....	79,700	13,600	36,400	7.49	7.80	2,020,000	B.
March.....	73,900	14,500	26,000	5.35	6.17	1,600,000	A.
April.....	38,600	16,800	28,900	5.95	6.64	1,720,000	A.
May.....	16,800	10,000	14,000	2.88	3.32	861,000	A.
June.....	11,500	6,930	8,400	1.73	1.93	500,000	A.
July.....	8,950	3,940	6,130	1.26	1.45	377,000	A.
August.....	3,940	3,330	3,620	.745	.86	223,000	A.
September.....	4,300	3,330	3,760	.774	.86	224,000	B.
The year.....	160,000	2,950	18,200	3.75	50.79	13,200,000	
1897-98.							
October.....	6,690	3,330	3,830	.788	.91	236,000	B.
November.....	54,100	3,330	17,500	3.60	4.02	1,040,000	A.
December.....	73,900	16,800	36,700	7.55	8.70	2,260,000	B.
January.....	27,600	10,600	16,200	3.33	3.84	996,000	A.
February.....	34,400	10,600	20,600	4.24	4.42	1,140,000	A.
March.....	15,200	9,220	11,400	2.35	2.71	701,000	A.
April.....	15,200	10,000	12,400	2.55	2.84	738,000	A.
May.....	10,600	7,420	8,360	1.72	1.98	514,000	A.
June.....	12,100	5,500	7,910	1.63	1.82	471,000	A.
July.....	5,500	3,330	4,100	.844	.97	252,000	A.
August.....	3,330	2,760	2,970	.611	.70	183,000	B.
September.....	4,360	2,760	3,040	.626	.70	181,000	B.
The year.....	73,900	2,760	12,000	2.47	33.61	8,710,000	
1898-99.							
October.....	5,500	3,330	3,500	.720	.83	215,000	B.
November.....	67,000	3,330	16,900	3.48	3.88	1,010,000	A.
December.....	55,800	9,220	20,500	4.22	4.86	1,260,000	A.
January.....	68,200	16,800	33,100	6.81	7.85	2,040,000	B.
February.....	79,700	10,900	28,200	5.80	6.04	1,570,000	A.
March.....	112,000	22,200	37,400	7.70	8.88	2,300,000	B.
April.....	30,700	14,200	21,100	4.34	4.84	1,260,000	A.
May.....	25,900	14,200	19,400	3.99	4.60	1,190,000	A.
June.....	24,200	13,600	18,900	3.89	4.34	1,120,000	A.
July.....	13,600	5,970	10,200	2.10	2.42	627,000	A.
August.....	7,920	5,040	5,770	1.19	1.37	355,000	A.
September.....	6,690	4,150	5,290	1.08	1.20	313,000	A.
The year.....	112,000	3,330	18,400	3.78	51.11	13,300,000	
1899-1900.							
October.....	40,000	3,730	9,210	1.90	2.19	566,000	A.
November.....	58,000	6,930	14,000	2.88	3.21	833,000	A.
December.....	98,800	15,200	34,000	7.00	8.07	2,090,000	B.
January.....	120,000	16,500	35,900	7.39	8.52	2,210,000	B.
February.....	68,800	14,200	23,300	4.79	4.99	1,290,000	A.
March.....	40,000	14,200	21,400	4.40	5.07	1,320,000	A.
April.....	33,900	10,600	15,900	3.27	3.65	946,000	A.
May.....	11,500	7,920	9,940	2.05	2.36	611,000	A.
June.....	8,690	5,500	6,820	1.40	1.56	406,000	A.
July.....	6,450	4,150	4,760	.979	1.13	293,000	A.
August.....	4,150	2,760	3,330	.685	.79	205,000	A.
September.....	3,330	2,580	3,010	.619	.69	179,000	A.
The year.....	120,000	2,580	15,100	3.11	42.23	10,900,000	

Monthly discharge of Willamette River at Albany, Oreg., for 1878-1880 and 1892-1910—Con.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1900-1901.							
October.....	12,400	2,760	5,560	1.14	1.31	342,000	A.
November.....	33,000	6,690	14,000	2.88	3.21	833,000	A.
December.....	80,400	7,920	22,600	4.65	5.36	1,390,000	A.
January.....	179,000	15,500	39,900	8.21	9.46	2,450,000	B.
February.....	137,000	8,430	33,300	6.85	7.13	1,850,000	B.
March.....	53,000	13,900	24,300	5.00	5.76	1,490,000	A.
April.....	29,400	10,600	18,100	3.72	4.15	1,080,000	A.
May.....	13,900	10,600	12,500	2.57	2.96	769,000	A.
June.....	10,600	5,270	7,450	1.53	1.71	443,000	A.
July.....	5,270	3,940	4,640	.955	1.10	285,000	A.
August.....	3,940	2,950	3,070	.632	.73	189,000	A.
September.....	6,930	2,950	3,860	.794	.89	230,000	A.
The year.....	179,000	2,760	15,800	3.25	43.77	11,400,000	
1901-2.							
October.....	5,970	3,330	3,860	.794	.92	237,000	A.
November.....	30,300	3,330	7,680	1.58	1.76	457,000	A.
December.....	79,700	10,300	26,000	5.35	6.17	1,600,000	A.
January.....	33,900	7,420	13,800	2.84	3.27	848,000	A.
February.....	70,700	7,920	30,200	6.21	6.47	1,680,000	A.
March.....	49,700	17,500	26,100	5.37	6.19	1,600,000	A.
April.....	43,500	12,100	21,300	4.38	4.89	1,270,000	A.
May.....	24,200	12,100	18,000	3.70	4.27	1,110,000	A.
June.....	15,500	6,690	10,400	2.14	2.39	619,000	A.
July.....	17,500	4,360	9,970	2.05	2.36	613,000	A.
August.....	4,360	3,330	3,860	.794	.92	237,000	A.
September.....	3,330	2,950	3,060	.630	.70	182,000	A.
The year.....	79,700	2,950	14,500	2.98	40.31	10,500,000	
1902-3.							
October.....	3,330	2,950	3,210	.660	.76	197,000	A.
November.....	53,000	3,330	17,500	3.60	4.02	1,040,000	A.
December.....	124,000	15,500	41,000	8.44	9.73	2,520,000	B.
January.....	188,000	10,300	42,200	8.68	10.01	2,580,000	B.
February.....	52,400	14,200	23,400	4.81	5.01	1,300,000	A.
March.....	33,000	12,100	16,100	3.31	3.82	990,000	A.
April.....	19,200	8,690	12,000	2.47	2.76	714,000	A.
May.....	12,400	9,760	11,400	2.35	2.71	701,000	A.
June.....	12,700	6,450	8,790	1.81	2.02	523,000	A.
July.....	6,690	4,150	5,240	1.08	1.24	322,000	A.
August.....	4,580	3,330	3,800	.782	.90	234,000	A.
September.....	6,690	3,330	4,520	.930	1.04	269,000	A.
The year.....	188,000	2,950	15,800	3.25	44.02	11,400,000	
1903-4.							
October.....	8,176	3,330	4,430	.912	1.05	272,000	A.
November.....	55,800	3,330	23,900	4.92	5.49	1,420,000	A.
December.....	17,500	9,490	13,200	2.72	3.14	812,000	A.
January.....	62,100	11,200	25,500	5.25	6.05	1,570,000	A.
February.....	124,000	13,300	44,000	9.05	9.76	2,530,000	B.
March.....	97,400	30,700	51,000	10.5	12.11	3,140,000	B.
April.....	40,000	17,500	26,700	5.49	6.12	1,590,000	A.
May.....	24,200	13,000	16,600	3.42	3.94	1,020,000	A.
June.....	13,000	6,690	9,400	1.93	2.15	559,000	A.
July.....	6,690	4,580	5,600	1.15	1.33	344,000	A.
August.....	4,580	3,530	3,880	.798	.92	289,000	A.
September.....	3,330	3,330	3,330	.685	.76	198,000	A.
The year.....	124,000	3,330	19,000	3.91	52.82	13,700,000	
1904-5.							
October.....	5,970	3,140	3,770	.776	.89	232,000	A.
November.....	8,430	3,140	4,960	1.02	1.14	295,000	A.
December.....	69,400	5,040	16,400	3.37	3.88	1,010,000	A.
January.....	69,400	10,000	20,100	4.14	4.77	1,240,000	A.
February.....	16,100	7,670	11,200	2.30	2.40	622,000	A.
March.....	47,600	6,450	15,500	3.19	3.68	953,000	A.
April.....	21,800	7,420	12,500	2.57	2.87	744,000	A.
May.....	12,400	6,210	8,990	1.85	2.13	553,000	A.
June.....	10,600	5,040	7,000	1.44	1.61	417,000	A.
July.....	5,040	2,950	3,850	.792	.91	237,000	B.
August.....	2,950	2,400	2,720	.560	.65	167,000	A.
September.....	3,330	2,400	2,520	.519	.58	150,000	A.
The year.....	69,400	2,400	9,130	1.88	25.51	6,620,000	

Monthly discharge of Willamette River at Albany, Oreg., for 1878-1880 and 1892-1910—Con.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905-6.							
October	8,430	3,330	5,290	1.09	1.26	325,000	A.
November	9,220	3,330	4,990	1.03	1.15	297,000	A.
December	19,600	7,420	11,900	2.45	2.82	732,000	A.
January	54,100	13,600	24,100	4.96	5.72	1,480,000	A.
February	56,300	8,430	22,000	4.53	4.72	1,220,000	A.
March	39,600	10,000	16,000	3.29	3.79	984,000	A.
April	20,300	9,220	12,000	2.47	2.76	714,000	A.
May	27,600	8,430	11,300	2.33	2.69	695,000	A.
June	18,900	7,920	13,000	2.67	2.98	774,000	A.
July	7,920	4,150	5,400	1.11	1.28	332,000	A.
August	4,150	2,970	3,300	.679	.78	203,000	A.
September	5,040	2,760	3,210	.660	.74	191,000	A.
The year	56,300	2,760	11,000	2.26	30.69	7,950,000	
1906-7.							
October	7,920	2,580	3,980	.819	.94	245,000	A.
November	44,000	3,730	18,200	3.74	4.17	1,080,000	A.
December	33,000	7,170	18,100	3.72	4.29	1,110,000	A.
January	128,000	10,300	27,800	5.72	6.60	1,710,000	A.
February	182,000	13,600	47,400	9.75	10.15	2,630,000	B.
March	37,600	11,500	18,600	3.83	4.42	1,140,000	A.
April	90,500	11,200	27,000	5.56	6.20	1,610,000	A.
May	10,600	7,920	9,250	1.90	2.19	569,000	A.
June	8,690	5,730	7,180	1.48	1.65	427,000	A.
July	5,970	3,530	4,500	.926	1.07	277,000	A.
August	4,580	2,950	3,360	.691	.80	207,000	A.
September	3,330	2,760	2,930	.603	.67	174,000	A.
The year	182,000	2,580	15,500	3.19	43.15	11,200,000	
1907-8.							
October	3,530	2,580	2,880	.593	.68	177,000	A.
November	35,300	2,760	7,880	1.62	1.81	469,000	A.
December	142,000	8,430	40,300	8.29	9.56	2,480,000	B.
January	35,300	11,200	22,000	4.53	5.22	1,350,000	A.
February	23,400	9,490	13,500	2.78	3.00	776,000	A.
March	51,900	9,190	17,700	3.64	4.20	1,090,000	A.
April	18,900	10,600	13,300	2.74	3.06	791,000	A.
May	19,200	10,000	12,700	2.61	3.01	781,000	A.
June	13,600	8,170	9,710	2.00	2.23	578,000	A.
July	7,920	4,360	5,730	1.18	1.36	352,000	A.
August	4,360	3,330	3,720	.765	.88	229,000	A.
September	3,940	2,760	3,170	.652	.73	189,000	A.
The year	142,000	2,580	12,800	2.63	35.74	9,260,000	
1908-9.							
October	13,900	2,760	5,340	1.10	1.27	328,000	A.
November	19,600	4,150	8,700	1.79	2.00	518,000	A.
December	27,600	5,500	9,830	2.02	2.33	604,000	A.
January	115,000	13,600	47,000	9.67	11.15	2,890,000	B.
February	49,200	15,800	28,700	5.91	6.15	1,590,000	A.
March	36,200	10,300	18,600	3.83	4.42	1,140,000	A.
April	13,600	7,670	9,880	2.03	2.26	588,000	A.
May	12,400	6,930	8,790	1.81	2.09	540,000	A.
June	14,500	5,500	8,530	1.76	1.96	508,000	A.
July	8,430	3,730	5,020	1.03	1.19	309,000	A.
August	3,730	3,140	3,390	.700	.81	208,000	A.
September	3,330	2,950	2,980	.613	.68	177,000	A.
The year	115,000	2,760	13,000	2.68	36.31	9,400,000	
1909-10.							
October	4,810	2,950	3,700	.761	.88	228,000	A.
November	168,000	5,040	34,500	7.10	7.92	2,050,000	B.
December	55,800	9,760	25,100	5.16	5.95	1,540,000	A.
January	34,800	10,000	17,700	3.64	4.20	1,090,000	A.
February	45,000	13,000	23,800	4.90	5.10	1,320,000	A.
March	90,500	11,200	27,800	5.72	6.60	1,710,000	A.
April	13,000	9,220	11,100	2.28	2.54	660,000	A.
May	15,800	6,450	9,040	1.86	2.14	556,000	A.
June	6,210	4,580	5,320	1.09	1.22	317,000	A.
July	4,580	3,140	3,650	.751	.87	224,000	A.
August	3,140	2,760	2,860	.588	.68	176,000	A.
September	3,530	2,580	2,790	.574	.64	166,000	A.
The year	168,000	2,580	13,900	2.86	38.74	10,000,000	

WILLAMETTE RIVER AT SALEM, OREG.

Location.—At the dock of the Oregon-Washington Railroad & Navigation Co. at Salem, below Santiam and Luckiamute rivers and above Mollala, Tualatin, and Clackamas rivers.

Records presented.—October 1, 1909, to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff in four sections.

Channel.—Gravel and sand; somewhat shifting.

Discharge measurements.—Made from highway bridge about one-half mile below the gage.

Estimates of discharge withheld for additional data.

The following measurement was made by F. F. Henshaw:

September 18, 1910: Gage height, -0.58 foot; discharge, 3,550 second-feet.

Daily gage height, in feet, of Willamette River at Salem, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....	0.4	1.5	12.7	4.8	8.2	14.4	3.4	2.9	1.5	0.5	-0.4	-0.6
2.....	.7	3.9	11.8	4.8	7.3	18.1	3.3	2.8	1.5	.5	-.4	-.6
3.....	.4	7.8	9.9	4.2	6.5	20.8	4.0	2.7	1.4	.5	-.4	-.6
4.....	-.3	5.9	8.3	3.7	5.8	19.6	4.3	2.9	1.3	.4	-.4	-.6
5.....	.1	4.4	7.3	3.5	5.2	16.3	4.1	3.4	1.2	.4	-.4	-.6
6.....	.1	3.6	6.6	3.3	4.9	13.1	4.1	3.4	1.1	.3	-.5	-.6
7.....	.0	3.1	6.1	3.2	4.7	11.0	4.1	3.2	1.1	.3	-.5	-.7
8.....	.1	3.1	6.3	3.9	4.5	9.2	4.2	3.0	1.1	.3	-.5	-.7
9.....	.2	4.1	7.9	4.2	4.3	8.0	4.5	3.0	1.0	.2	-.5	-.7
10.....	.1	4.4	10.9	4.1	4.2	7.3	4.4	2.9	.9	.2	-.5	-.7
11.....	.1	5.5	10.9	3.9	4.4	6.8	4.6	3.7	.9	.2	-.5	-.7
12.....	-.1	5.8	11.5	3.7	4.9	6.5	4.7	4.7	1.1	.1	-.5	-.7
13.....	-.1	4.9	13.0	3.5	5.1	6.5	4.5	4.3	1.3	.1	-.5	-.7
14.....	-.1	4.4	14.5	3.3	7.7	6.7	4.4	3.9	1.1	.1	-.5	-.7
15.....	-.2	3.9	12.7	3.3	8.2	6.7	4.2	3.4	1.0	.0	-.5	-.7
16.....	-.2	3.3	10.0	3.3	7.8	6.6	3.8	3.1	.9	-.1	-.5	-.7
17.....	-.2	2.9	8.3	3.2	6.8	6.3	3.7	2.9	.8	-.1	-.5	-.7
18.....	-.3	2.8	7.2	3.1	6.3	6.0	3.6	2.7	.9	-.1	-.6	-.6
19.....	-.2	5.5	6.4	4.8	7.3	5.9	3.7	2.5	.9	-.1	-.6	-.6
20.....	-.1	10.5	5.7	6.0	8.7	6.1	3.9	2.4	.8	-.1	-.6	-.6
21.....	.5	14.8	5.2	5.5	8.7	5.8	4.0	2.2	.9	-.1	-.6	-.6
22.....	1.1	14.4	4.7	5.9	8.2	5.3	3.9	2.1	.9	-.1	-.6	-.3
23.....	1.1	19.2	4.3	7.8	7.6	5.5	3.7	2.1	1.1	-.1	-.6	-.3
24.....	.8	24.9	4.1	10.5	8.8	6.1	3.7	2.0	1.1	-.2	-.6	-.4
25.....	.5	30.7	3.8	11.3	11.1	5.7	3.8	2.0	1.0	-.2	-.6	-.4
26.....	.4	25.9	3.7	10.1	12.5	5.1	3.9	2.0	.9	-.2	-.6	-.5
27.....	.2	19.7	3.6	8.8	12.5	4.7	3.7	2.0	.7	-.2	-.6	-.6
28.....	.1	13.3	3.4	9.5	12.5	4.4	3.4	1.9	.7	-.3	-.6	-.6
29.....	.1	11.7	3.3	10.0	.....	4.1	3.1	1.8	.6	-.3	-.6	-.6
30.....	.3	11.7	3.1	9.7	.....	3.8	2.9	1.7	.6	-.3	-.6	-.6
31.....	.7	.....	3.5	8.7	.....	3.6	.....	1.6	.....	-.3	-.6	.....

WILLAMETTE RIVER AT OREGON CITY, OREG.

Location.—At the falls in Willamette River at Oregon City, about half a mile above Clackamas River.

Records presented.—January 1, 1909, to September 30, 1910.

Drainage area.—10,200 square miles.

Gage.—Vertical staff on the left bank at the foot of the locks. Readings are also made on a vertical staff gage on the left bank about 1 mile above the falls.

Channel.—Rocky; practically permanent.

Discharge measurements.—Made from a boat at head of Clackamas Rapids just above mouth of Clackamas River, or from Southern Pacific Railroad bridge at Oswego, about 7 miles below gage.

Cooperation.—Gage-height records furnished by the Portland Railway Light & Power Co.

Estimates of discharge withheld for additional data.

Discharge measurements of Willamette River at Oregon City, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909. Sept. 3	Stevens and Post.....	<i>Feet.</i> 2.90	<i>Sec.-ft.</i> 4,550	1910. Sept. 30	West and Miller.....	<i>Feet.</i> 2.00	<i>Sec.-ft.</i> 3,430
12	R. B. Post.....	1.97	3,310				
Oct. 12	Henshaw and Allen.....	3.20	5,620				

Daily gage height, in feet, of Willamette River at Oregon City, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....				12.4	12.1	16.2	9.4	8.1	12.3	14.8	6.0	2.9
2.....				11.5	12.6	16.1	10.6	7.9	12.5	14.5	6.1	2.7
3.....				11.8	12.8	16.3	10.4	7.8	12.7	14.2	5.9	2.7
4.....				12.5	13.7	16.4	10.1	8.2	12.9	13.9	5.6	2.7
5.....				13.4	13.7	15.9	11.0	8.3	13.6	13.6	5.0	2.5
6.....				14.4	13.7	15.3	9.6	8.6	14.6	13.3	4.9	2.7
7.....				15.0	13.8	14.3	9.4	8.5	15.5	13.3	4.9	2.7
8.....				16.2	13.7	13.6	9.1	7.9	16.1	13.3	4.5	2.7
9.....				17.0	13.1	13.1	8.8	7.5	16.5	13.1	4.7	2.6
10.....				17.2	12.8	12.8	8.15	7.5	16.6	12.7	4.5	2.7
11.....				15.8	12.9	12.7	8.1	7.5	16.4	12.4	4.3	2.5
12.....				13.6	12.9	11.9	8.5	7.9	16.1	12.2	4.2	1.9
13.....				12.2	12.9	11.4	8.2	8.1	15.9	12.2	3.9	2.5
14.....				11.2	13.3	10.7	8.0	7.9	15.8	12.1	3.8	2.7
15.....				10.7	13.7	10.5	7.9	7.9	15.8	11.9	3.7	2.7
16.....				14.6	14.3	10.2	7.8	7.1	15.8	11.5	3.9	2.7
17.....				19.3	17.0	10.1	7.7	7.6	16.2	11.2	3.4	2.6
18.....				23.0	18.9	10.3	7.5	7.4	16.4	10.6	3.1	2.6
19.....				24.9	20.3	10.3	7.6	7.5	16.7	10.3	3.0	2.4
20.....				27.4	20.7	10.0	7.6	7.5	17.0	9.8	3.0	2.5
21.....				30.4	19.8	9.8	7.4	7.3	17.3	9.2	2.8	2.4
22.....				31.6	18.6	9.7	7.3	7.0	17.3	8.6	2.0	2.4
23.....				30.7	17.0	9.3	7.1	6.8	17.2	8.2	2.9	2.5
24.....				29.0	15.8	9.0	7.0	6.7	16.8	7.6	2.9	2.6
25.....				26.0	15.5	8.7	6.8	6.6	16.7	7.1	2.7	2.5
26.....				21.0	16.2	8.6	6.9	6.7	16.3	7.0	2.9	2.4
27.....				17.0	16.5	8.5	7.3	6.8	15.9	6.7	2.9	2.5
28.....				15.1	16.2	8.2	8.3	7.5	15.7	6.5	2.7	2.7
29.....				13.8	.....	8.7	8.9	8.6	15.5	6.4	2.5	3.0
30.....				12.8	.....	8.6	8.3	9.5	15.1	6.4	2.9	2.7
31.....				12.2	.....	9.0	.....	11.5	.....	6.2	2.1	.....

Daily gage height, in feet, of Willamette River at Oregon City, Oreg., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2.7	5.65	20.7	9.85	15.35	22.0	9.1	12.9	12.65	6.7	3.6	2.35
2.....	3.0	9.3	20.35	10.3	14.5	24.35	9.0	12.95	12.5	6.4	3.45	2.25
3.....	3.4	13.35	19.2	9.75	14.1	27.0	9.45	12.85	12.4	6.1	3.2	2.4
4.....	3.6	13.4	16.85	8.95	12.55	27.75	10.3	12.7	12.4	6.0	3.3	2.0
5.....	2.9	11.85	15.1	8.3	11.9	26.75	10.15	12.8	12.4	6.45	3.1	2.25
6.....	2.9	10.5	13.95	8.1	11.5	23.75	10.1	12.7	12.3	6.45	3.05	2.1
7.....	2.6	9.4	12.9	8.0	11.1	20.65	10.15	12.65	11.8	6.05	2.7	2.0
8.....	2.6	9.5	12.65	8.8	10.6	18.15	10.9	12.55	11.45	5.9	2.95	2.0
9.....	2.8	10.45	13.25	9.55	10.35	16.0	11.7	12.65	11.2	5.7	2.95	1.9
10.....	2.5	11.45	15.55	9.65	10.05	14.65	11.4	12.8	10.8	5.8	2.75	2.05
11.....	3.0	12.15	17.25	9.45	10.25	13.8	11.5	13.35	10.6	5.45	2.7	1.85
12.....	2.8	12.45	18.35	9.05	10.85	13.25	11.8	14.35	10.4	5.15	2.65	1.85
13.....	2.8	11.9	20.05	8.8	11.7	13.1	11.65	15.0	10.15	4.9	2.5	2.0
14.....	2.8	10.85	21.4	8.6	13.8	13.2	11.45	15.35	10.0	4.75	2.15	1.95
15.....	2.7	10.2	20.95	8.55	14.6	13.25	11.3	15.3	9.85	4.6	2.45	1.8
16.....	2.7	9.3	19.65	8.3	14.4	13.1	10.95	15.25	9.65	4.35	2.5	2.05
17.....	2.5	8.6	17.0	8.55	13.7	12.8	10.45	15.0	9.6	4.35	2.5	2.1
18.....	2.4	9.0	15.0	9.15	13.1	12.5	10.25	14.6	9.35	4.3	2.45	2.2
19.....	2.6	12.2	13.9	11.85	13.7	12.4	10.2	14.2	9.0	4.35	2.6	2.5
20.....	2.8	17.6	12.75	12.8	14.6	12.5	10.3	13.95	9.0	4.35	2.45	2.25
21.....	2.8	19.45	12.0	12.6	15.0	12.3	10.5	13.65	8.9	4.5	2.3	2.25
22.....	3.6	22.8	11.3	13.1	14.75	12.05	10.65	13.3	8.7	4.4	2.6	2.35
23.....	5.2	25.5	10.6	15.05	14.25	12.45	10.75	13.15	8.45	4.35	2.4	2.45
24.....	4.7	29.6	10.0	17.9	15.15	13.1	11.05	12.75	8.35	4.25	2.25	2.4
25.....	4.7	32.75	9.45	18.5	17.95	13.35	11.4	12.55	8.1	4.2	2.3	2.45
26.....	3.7	35.85	9.3	17.8	19.1	12.95	11.55	12.55	7.6	4.0	2.3	2.2
27.....	3.2	32.9	9.0	16.65	19.85	12.15	11.75	12.65	7.6	3.85	2.25	2.1
28.....	3.4	27.15	8.8	16.1	20.45	11.5	12.1	12.85	7.2	3.8	2.2	2.05
29.....	3.3	22.5	8.4	16.5	.....	10.85	12.45	12.85	6.9	3.8	2.5	2.0
30.....	3.3	20.9	8.05	16.55	.....	10.1	12.85	13.0	6.8	3.65	2.15	2.05
31.....	3.2	.....	8.65	16.0	.....	9.5	.....	13.0	.....	3.75	2.35	.....

NOTE.—One reading daily until after Oct. 31, 1909, when readings were taken morning and evening at foot of locks.

SALMON CREEK¹ NEAR HAZELDELL, OREG.

Location.—In sec. 15, T. 21 S., R. 3 E., at Military Road crossing, 1 mile above mouth of stream.

Records presented.—October 11 to November 21, 1909.

Drainage area.—Not measured.

Gage.—Chain gage attached to bridge.

Channel.—Gravel and small boulders, practically permanent.

Discharge measurements.—Made by wading.

Cooperation.—Gage-height record furnished by the Waldo Lake Irrigation & Power Co.

The following discharge measurement was made by A. P. Stover:

October 11, 1909: Gage height, 2.00 feet; discharge, 139 second-feet.

Daily gage height, in feet, of Salmon Creek near Hazeldell, Oreg., for 1909.

Day.	Oct.	Nov.	Day.	Oct.	Nov.	Day.	Oct.	Nov.
1.....		2.7	11.....	2.0	2.35	21.....	2.15	3.7
2.....		2.45	12.....	2.0	2.35	22.....	2.05	.....
3.....		2.35	13.....	2.0	2.4	23.....	2.0	.....
4.....		2.3	14.....	2.0	2.3	24.....	2.0	.....
5.....		2.25	15.....	2.0	2.2	25.....	2.0	.....
6.....		2.3	16.....	2.0	2.2	26.....	2.0	.....
7.....		2.25	17.....	2.0	2.2	27.....	2.0	.....
8.....		2.2	18.....	2.0	2.2	28.....	2.0	.....
9.....		2.3	19.....	2.1	3.6	29.....	2.1	.....
10.....		2.35	20.....	2.1	6.0	30.....	2.1	.....
						31.....	2.6	.....

NOTE.—Gage washed out on Nov. 22.

¹ Called Kelsey River, the name by which it is denoted on Land Office maps, in Water-Supply Paper No. 272, p. 444, but Salmon Creek is now the generally accepted name.

NORTH FORK OF MIDDLE FORK OF WILLAMETTE RIVER NEAR HAZELDELL, OREG.

Location.—In sec. 12, T. 21 S., R. 2 E., one-fourth mile below a wagon bridge, one-half mile above the mouth of North Fork of Middle Fork, and 4 miles west of Hazeldell.

Records presented.—October 12, 1909, to September 30, 1910.

Drainage area—Not measured.

Gage.—Vertical staff on right bank.

Channel.—Gravel and cobblestones; shifts somewhat.

Discharge measurements.—Made from a highway bridge or by wading.

Artificial control.—Some storage developed on Waldo Lake, but there have been no storage operations since 1909.

Estimates of discharge withheld for additional data.

Discharge measurements of North Fork of Middle Fork of Willamette River near Hazeldell, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909. Oct. 12	A. P. Stover.....	<i>Ft.</i> 1.03	<i>Sec.-ft.</i> 165	1910. July 28	B. F. Heintzleman.....	<i>Ft.</i> 1.35	<i>Sec.-ft.</i> 137

Daily gage height, in feet, of North Fork of Middle Fork of Willamette River near Hazeldell, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....			4.5	2.7	3.3	8.15	2.7	2.45	2.0	1.6	1.3	1.3
2.....			4.0	2.4	3.2	7.4	2.75	2.4	1.95	1.6	1.3	1.3
3.....			3.7	2.4	3.05	6.4	2.8	2.45	1.9	1.55	1.3	1.3
4.....		1.8	3.5	2.4	2.9	5.8	2.85	2.55	1.8	1.5	1.3	1.3
5.....		1.7	3.3	2.4	2.8	5.4	2.9	2.5	1.7	1.5	1.3	1.3
6.....		1.7	3.1	2.3	2.75	4.6	2.9	2.45	1.75	1.5	1.3	1.3
7.....		1.6	3.0	2.35	2.7	4.35	2.85	2.5	1.7	1.5	1.3	1.3
8.....		1.5	3.2	2.3	2.6	4.1	2.8	2.5	1.7	1.5	1.3	1.3
9.....		1.65	3.6	2.25	2.55	4.0	2.85	2.8	1.7	1.5	1.3	1.3
10.....		1.9	4.0	2.2	2.5	3.9	2.9	3.3	1.7	1.5	1.3	1.3
11.....		1.8	4.4	2.2	2.7	3.8	2.9	3.2	1.7	1.5	1.3	1.3
12.....	1.03	1.8	5.2	2.15	2.65	3.7	2.9	3.0	1.75	1.45	1.3	1.3
13.....	1.0	1.7	5.7	2.1	2.65	3.6	2.9	2.85	1.7	1.45	1.3	1.3
14.....	1.0	1.6	4.7	2.1	2.6	3.65	2.8	2.7	1.7	1.45	1.3	1.3
15.....	1.0	1.6	4.1	2.1	2.6	3.7	2.7	2.6	1.7	1.4	1.3	1.3
16.....	1.0	1.5	3.8	2.05	2.65	3.75	2.7	2.5	1.7	1.4	1.3	1.3
17.....	1.0	1.4	3.5	2.0	2.6	3.8	2.8	2.4	1.7	1.4	1.3	1.3
18.....	1.1	1.6	3.4	2.1	2.9	3.85	2.9	2.3	1.65	1.4	1.3	1.35
19.....	1.2	4.65	3.1	2.3	3.4	3.9	3.1	2.25	1.65	1.4	1.3	1.35
20.....	1.3	4.7	3.0	2.3	3.2	3.7	3.15	2.2	1.75	1.4	1.3	1.35
21.....	1.2	4.85	2.9	2.5	3.15	3.5	3.0	2.0	1.9	1.4	1.3	1.35
22.....	1.15	12.4	2.8	2.7	2.95	3.8	2.9	2.15	1.8	1.4	1.3	1.3
23.....	1.1	11.5	2.7	3.8	3.0	3.9	2.95	2.1	1.85	1.4	1.3	1.3
24.....	1.0	8.4	2.6	3.5	3.1	3.4	3.0	2.1	1.7	1.4	1.3	1.3
25.....	1.0	6.55	2.55	3.25	3.7	3.2	3.05	2.05	1.8	1.4	1.3	1.3
26.....	1.0	5.8	2.5	3.4	3.6	3.1	3.0	2.0	1.7	1.4	1.3	1.3
27.....		4.5	2.4	3.7	3.8	2.9	2.85	2.0	1.6	1.4	1.3	1.3
28.....		4.8	2.35	4.0	5.5	2.8	2.7	2.0	1.6	1.35	1.3	1.3
29.....		5.1	2.3	3.65		2.75	2.6	2.0	1.5	1.35	1.3	1.3
30.....		4.5	2.6	3.6		2.7	2.5	2.0	1.6	1.35	1.3	1.3
31.....			2.9	3.5		2.65		2.0		1.3	1.3	

COAST FORK OF WILLAMETTE RIVER NEAR GOSHEN, OREG.

Location.—In sec. 30, T. 18 S., R. 2 W., at the highway bridge 3 miles east of Goshen, 4 miles above the junction of the Coast Fork and Middle Fork, 6 miles west of Jasper, and about 9 miles southeast of Eugene.

Records presented.—August 23, 1905, to September 30, 1910.

Drainage area.—690 square miles.

Gage.—Vertical staff in two sections; datum unchanged.

Channel.—Gravel and small bowlders; probably shifts during floods.

Discharge measurements.—Made from the highway bridge at the gage or by wading.

Accuracy.—Results good, except for low water of 1909 and 1910, which are uncertain.

Discharge measurements of Coast Fork of Willamette River near Goshen, Oreg., in 1905–1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 23	L. R. Allen	0.30	67.6	Mar. 8	I. E. Oakes	2.50	1,440
Nov. 7	do .....	.67	182	Aug. 14	J. C. Stevens .....	.35	105
Dec. 29	do	2.78	1,910	Dec. 23	C. E. Ellsworth	8.10	9,500
1906.				1908			
Feb. 2	L. R. Allen	2.38	1,620	Mar. 18	P. A. Cupper	5.25	4,870
Mar. 22	do	2.87	2,260	Sept. 22	H. D. McGlashan .....	.39	63
May 3	do	1.70	917				
July 16	do .....	.82	252	1909.			
Aug. 17	do .....	.58	132	Jan. 18	H. D. McGlashan	10.02	14,800
Sept. 19	I. E. Oakes .....	.65	145				
1907.				1910.			
Jan. 31	I. E. Oakes	7.75	10,700	Aug. 4	Henshaw and Davenport.	.24	54

Daily gage height, in feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905–1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1905.			1905.			1905.		
1.		0.25	11.		0.2	21.		
2.		.25	12.		.2	22.		
3.		.25	13.		.25	23.	0.3	
4.		.25	14.		.25	24.	.3	
5.		.25	15.		.25	25.	.3	
6.		.25	16.		.25	26.	.3	
7.		.25	17.		.25	27.	.3	
8.		.2	18.		.25	28.	.3	
9.		.2	19.		.25	29.	.25	
10.		.2	20.		.25	30.	.25	
						31.	.25	

Daily gage height, in feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....		1.0	2.9	3.7	2.5	4.3	4.7	2.0	3.4	1.3	0.6	0.3
2.....		.9	3.0	3.0	2.5	3.7	3.7	1.8	2.9	1.3	.6	.3
3.....		.8	3.1	2.8	2.0	3.3	3.2	1.7	2.8	1.2	.6	.3
4.....	0.5	.6	3.3	2.8	2.0	3.2	3.0	1.5	3.0	1.2	.6	.3
5.....	.5	.6	2.8	3.1	2.0	3.0	2.7	1.5	2.7	1.3	.6	.3
6.....	.5	.5	2.5	3.0	1.8	3.0	2.6	1.5	2.6	1.1	.6	.3
7.....	1.4	.5	2.7	2.7	1.8	2.9	2.5	1.5	2.7	1.1	.5	.3
8.....	2.3	.5	3.2	2.5	1.7	2.9	2.2	1.4	2.9	1.1	.5	.3
9.....	1.5	.4	2.6	5.0	1.6	2.8	2.3	1.4	3.5	1.1	.5	.3
10.....	1.1	.4	2.2	4.0	1.6	2.7	2.2	1.4	3.0	1.0	.5	.3
11.....	1.0	.4	2.0	3.6	1.6	2.5	2.0	1.4	2.7	1.0	.5	.3
12.....	.8	.4	2.0	3.5	1.5	2.3	1.9	1.3	2.5	1.0	.5	.5
13.....	.7	.4	1.9	5.4	1.3	2.1	1.7	1.3	2.5	1.0	.5	.5
14.....	.6	.3	1.5	4.5	1.3	2.0	1.7	1.4	2.3	.9	.4	.8
15.....	.7	.3	1.3	4.3	1.7	1.9	1.6	2.2	2.3	.9	.4	1.0
16.....	1.9	.3	1.5	5.7	1.4	1.8	1.5	2.5	2.3	.8	.4	1.0
17.....	1.5	.4	1.5	7.5	1.6	1.6	1.5	2.2	2.9	.8	.5	.8
18.....	1.3	.6	1.5	5.4	2.0	1.7	1.5	2.0	2.6	.8	.5	.8
19.....	1.3	1.0	1.9	4.5	4.5	1.7	1.4	2.0	2.3	.8	.5	.7
20.....	1.1	2.3	3.1	3.7	3.7	1.9	1.4	2.0	2.0	.8	.5	.5
21.....	1.0	1.9	3.0	3.3	6.2	2.7	1.4	1.9	2.0	.8	.5	.5
22.....	1.0	1.5	2.5	3.0	5.6	2.9	1.5	2.4	1.8	.8	.5	.5
23.....	.9	1.3	2.0	3.5	5.2	2.6	1.6	2.9	1.5	.8	.5	.6
24.....	.8	1.3	1.9	5.4	7.0	2.5	1.6	2.5	1.6	.8	.5	.7
25.....	.9	1.2	1.7	4.4	7.0	2.4	1.7	2.3	1.6	.8	.4	1.0
26.....	2.0	1.0	2.2	3.7	5.3	2.2	2.0	2.3	1.5	.7	.3	.8
27.....	1.7	2.2	3.7	3.5	6.0	2.2	1.9	2.1	1.5	.7	.3	.7
28.....	1.5	2.3	3.3	3.7	5.0	2.1	2.7	2.5	1.5	.7	.3	.6
29.....	1.3	1.9	2.8	2.7	.....	2.0	2.7	9.5	1.5	.7	.3	.6
30.....	1.2	3.0	3.0	2.7	.....	2.0	2.2	5.7	1.4	.7	.3	.....
31.....	1.0	.....	5.0	2.6	.....	3.0	.....	4.4	.....	.7	.3	.....
1906-7.												
1.....	.7	.8	1.4	2.9	9.2	3.6	3.7	1.7	.8	.8	.4	.4
2.....	.7	.8	1.4	2.8	8.9	3.6	3.4	1.7	.8	.8	.4	.4
3.....	.6	.8	1.5	5.0	10.8	3.2	3.2	1.7	.8	.8	.4	.3
4.....	.5	1.0	1.5	14.8	13.0	3.2	2.9	1.4	.8	.8	.4	.3
5.....	.7	1.5	1.7	8.9	13.8	2.7	3.2	1.2	.8	.7	.4	.3
6.....	.7	1.6	1.8	6.1	10.0	2.5	6.3	1.2	.8	.7	.4	.3
7.....	.5	1.9	2.3	5.0	7.2	2.5	14.0	1.1	.8	.7	.4	.3
8.....	.5	2.0	2.9	4.1	5.6	2.3	8.6	1.1	.8	.7	.8	.4
9.....	.5	2.5	3.0	3.7	5.0	2.1	6.4	1.1	.8	.7	.9	.4
10.....	.6	2.0	3.4	3.4	4.2	2.3	6.0	1.1	.8	.7	.9	.3
11.....	.6	2.0	3.0	3.1	3.9	2.2	5.7	1.1	.9	.6	.9	.3
12.....	.8	2.0	2.7	3.1	3.5	2.2	5.6	1.2	1.4	.6	.8	.3
13.....	1.0	2.0	2.3	2.9	3.2	2.1	4.4	1.2	1.4	.6	.6	.3
14.....	1.0	3.0	2.3	2.9	2.9	2.1	3.9	1.1	1.7	.6	.6	.3
15.....	1.0	3.4	2.1	2.5	2.6	2.1	3.5	1.1	1.6	.6	.6	.3
16.....	1.2	5.2	4.0	2.4	2.5	2.2	3.1	1.1	1.6	.6	.5	.8
17.....	1.5	4.3	3.7	2.4	2.5	3.5	2.9	1.0	1.6	.5	.5	.8
18.....	1.9	5.0	3.0	2.6	2.3	7.6	2.5	1.0	1.6	.5	.5	.7
19.....	1.8	4.7	3.2	2.5	2.2	5.7	2.5	1.0	1.5	.5	.5	.7
20.....	1.7	3.0	4.4	2.5	2.2	7.6	2.5	1.0	1.3	.5	.5	.7
21.....	1.5	3.6	4.0	2.3	2.1	5.7	2.5	1.0	1.0	.5	.4	.7
22.....	1.4	3.0	3.0	2.1	2.1	5.0	2.4	1.2	1.0	.5	.4	.6
23.....	1.4	3.0	3.0	2.1	2.4	5.0	2.3	1.2	1.0	.5	.4	.6
24.....	1.0	2.6	3.4	3.1	2.5	4.7	2.3	1.3	1.0	.5	.4	.5
25.....	1.0	2.3	4.0	3.5	3.4	4.4	2.3	1.3	1.0	.5	.8	.4
26.....	1.0	2.0	5.0	3.6	3.5	4.0	2.1	1.2	1.0	.4	.8	.4
27.....	1.0	2.0	4.2	3.9	2.7	3.6	2.1	1.2	.9	.4	.7	.4
28.....	.9	2.0	3.3	5.6	2.7	3.5	2.0	1.1	.9	.4	.5	.3
29.....	.9	1.7	2.6	8.7	.....	3.5	2.0	1.1	.9	.4	.4	.6
30.....	.9	1.5	2.6	7.7	.....	3.4	1.9	.9	.8	.4	.4	.8
31.....	.8	.....	2.3	7.5	.....	3.6	.....	.8	.....	.4	.4	.....

Daily gage height, in feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1.0	0.7	2.0	5.8	2.5	2.3	3.3	2.4	2.3	2.45	0.7	0.8
2.....	1.0	.9	1.7	5.6	2.3	2.0	3.2	2.4	2.3	2.4	.7	.7
3.....	.9	1.3	1.7	4.8	2.0	2.0	3.0	2.2	2.8	2.4	.65	.7
4.....	.8	1.3	1.6	4.2	2.7	1.9	3.3	2.0	2.7	2.3	.65	.7
5.....	.8	1.2	1.7	4.0	3.0	1.9	3.0	2.0	2.5	2.0	.65	.7
6.....	.5	.9	1.5	4.0	3.6	1.7	2.6	2.3	2.5	1.7	.65	.8
7.....	.7	.9	1.3	3.7	5.0	1.5	2.5	2.4	2.3	1.6	.65	.8
8.....	.6	.9	1.5	3.9	4.3	2.4	2.4	2.25	2.25	1.35	.6	.7
9.....	.6	.9	1.7	6.8	4.3	2.5	2.3	2.2	2.2	1.0	.6	.55
10.....	.5	.9	2.0	5.0	4.2	2.6	2.1	1.7	2.2	.9	.8	.65
11.....	.5	.8	2.6	4.6	4.0	2.55	2.0	1.65	2.0	.9	.8	.55
12.....	.5	.8	3.1	4.6	3.8	2.55	2.3	2.0	1.85	.9	.9	.55
13.....	.5	.8	8.8	4.5	3.8	2.5	2.3	2.1	1.6	.8	.9	.55
14.....	.5	.8	6.4	4.3	3.8	2.5	2.3	2.2	1.6	.8	.8	.55
15.....	.5	.9	5.5	4.3	3.6	3.1	2.2	2.4	1.7	.8	.8	.55
16.....	.5	1.0	5.0	4.1	3.6	4.4	2.2	2.5	1.75	.8	.8	.45
17.....	.4	1.5	4.7	4.1	3.4	5.4	2.1	3.2	1.9	.8	.8	.45
18.....	.4	1.7	4.6	3.7	3.3	5.3	2.0	3.9	2.2	.8	.8	.45
19.....	.4	1.9	4.3	3.5	3.3	4.4	2.0	4.2	2.4	.8	.7	.4
20.....	.4	2.0	4.3	3.5	3.0	3.4	2.0	4.7	2.4	.75	.7	.45
21.....	.4	2.5	4.0	3.3	3.0	3.3	1.9	4.5	2.9	.75	.65	.45
22.....	.4	3.0	11.0	3.2	3.0	2.8	2.3	4.3	3.5	.7	.65	.35
23.....	.3	3.6	13.0	3.2	2.9	2.6	2.5	3.6	3.5	.7	.65	.35
24.....	.3	3.5	10.5	3.0	2.9	2.4	3.5	3.4	3.3	.7	.6	.35
25.....	.3	5.3	11.0	3.0	2.7	2.6	3.3	3.0	3.0	.7	.6	.35
26.....	.3	4.7	14.1	2.9	2.5	2.35	3.0	2.8	3.0	.7	.6	.35
27.....	.3	4.0	10.0	2.7	2.4	2.5	2.7	2.8	2.7	.75	.6	.35
28.....	.3	3.6	7.2	2.7	2.3	2.5	2.6	2.7	2.6	.75	.6	.35
29.....	.4	3.0	6.8	2.6	2.3	2.5	2.6	2.5	2.6	.75	.55	.25
30.....	.6	2.2	6.6	2.6	.....	2.5	2.4	2.5	2.5	.7	.8	.25
31.....	.7	.....	6.0	2.5	.....	3.2	.....	2.5	.....	.7	.8	.....
1908-9.												
1.....	.55	1.45	1.35	2.9	3.0	5.4	2.5	1.25	2.5	.75	.65	.35
2.....	.65	1.35	1.35	2.7	3.0	5.4	3.0	1.25	1.65	.65	.65	.35
3.....	.65	1.25	1.25	3.5	3.5	5.5	2.8	1.35	1.55	.65	.65	.35
4.....	.65	1.15	1.25	6.3	3.7	5.7	2.5	1.45	1.45	.65	.65	.35
5.....	.55	1.15	1.25	6.4	3.9	4.6	2.5	1.35	1.35	.65	.6	.35
6.....	.55	.85	1.25	7.0	3.5	4.4	1.65	1.35	1.35	1.15	.55	.35
7.....	.55	.85	1.25	9.3	3.45	4.0	1.65	1.35	1.25	1.55	.55	.35
8.....	.35	.95	1.25	10.4	3.4	3.7	1.45	1.25	1.25	1.25	.55	.35
9.....	.35	.85	1.25	6.5	3.3	3.9	1.35	1.15	1.15	1.15	.55	.35
10.....	.35	.85	1.25	4.9	3.3	3.7	1.35	1.15	1.15	1.15	.55	.35
11.....	.25	.85	1.2	3.9	3.3	3.4	1.25	1.35	1.15	1.15	.55	.35
12.....	.25	.85	1.15	3.5	3.4	3.1	1.15	1.35	1.15	1.15	.4	.35
13.....	.45	.85	1.35	3.0	4.7	3.0	1.05	1.35	1.15	1.10	.35	.35
14.....	1.05	.85	1.65	2.9	4.8	3.0	1.05	1.25	1.15	1.05	.35	.35
15.....	5.25	.75	1.55	7.8	4.5	2.8	1.05	1.25	1.05	.95	.35	.35
16.....	4.0	.75	1.55	13.7	4.5	2.7	1.05	1.25	1.05	.75	.35	.35
17.....	1.85	.75	1.35	8.0	4.4	2.8	.95	1.25	1.15	.65	.35	.35
18.....	1.75	.75	1.35	10.5	5.9	2.7	1.35	1.15	1.05	.65	.35	.35
19.....	1.75	1.85	1.25	7.5	6.4	2.6	1.45	1.15	1.05	.65	.35	.35
20.....	1.65	1.75	1.25	10.0	6.0	2.5	1.45	1.15	1.05	.6	.35	.35
21.....	1.65	4.4	1.25	11.0	6.4	1.75	1.35	1.15	.95	.55	.35	.35
22.....	1.35	3.3	1.35	9.5	5.3	1.65	1.35	1.15	.95	.55	.35	.35
23.....	1.35	4.0	1.55	6.5	4.3	1.45	1.25	1.15	.95	.55	.35	.35
24.....	1.35	4.2	4.0	5.3	4.4	1.35	1.25	1.05	.85	.55	.35	.35
25.....	1.35	3.5	3.2	4.5	7.4	1.25	1.25	1.05	.85	.65	.35	.35
26.....	1.45	3.0	5.2	3.7	5.0	1.25	1.25	1.15	.85	.7	.35	.35
27.....	1.25	1.85	4.2	3.4	5.2	1.25	1.35	1.25	.85	.75	.35	.35
28.....	1.25	1.55	4.0	3.3	5.5	1.25	1.45	1.45	.8	.75	.35	.35
29.....	1.35	1.35	5.0	3.2	.....	1.35	1.35	1.75	.75	.7	.35	.55
30.....	1.15	1.35	4.1	3.0	.....	1.35	1.35	2.6	.75	.65	.35	.75
31.....	1.35	.....	3.5	3.0	.....	1.65	.....	2.5	.....	.65	.35	.....

Daily gage height, in feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	0.85	2.5	6.8	3.9	3.4	8.6	2.5	0.95	0.85	0.65	0.3	0.2
2.....	.85	3.9	5.2	3.4	3.3	7.9	2.5	.95	.75	.65	.3	.2
3.....	.85	2.8	4.6	2.9	3.3	6.5	2.6	1.15	.75	.55	.25	.2
4.....	.85	2.5	4.0	2.8	3.1	5.8	2.6	1.15	.75	.55	.25	.2
5.....	.75	1.05	3.8	2.5	2.9	5.2	2.6	1.05	.75	.55	.25	.2
6.....	.75	.75	3.9	2.5	2.8	4.8	2.6	1.05	.75	.55	.2	.2
7.....	.65	1.65	3.6	3.4	2.8	4.3	2.6	1.05	.75	.55	.2	.3
8.....	.65	2.5	4.5	3.2	2.8	3.8	2.6	.95	.75	.5	.2	.2
9.....	.65	2.9	7.6	3.4	2.8	3.7	2.7	.95	.75	.5	.2	.2
10.....	.65	4.2	6.0	3.6	3.0	3.5	2.7	4.0	.75	.5	.2	.2
11.....	.55	3.9	5.0	3.2	3.0	3.3	2.7	3.6	.75	.45	.2	.2
12.....	.55	3.0	5.8	2.8	3.0	3.1	2.6	2.9	.75	.45	.2	.2
13.....	.55	2.5	6.2	2.5	3.2	3.0	2.6	2.6	.75	.45	.2	.2
14.....	.55	2.7	5.6	2.5	4.0	3.0	2.6	1.65	.75	.45	.2	.2
15.....	.55	2.4	4.6	2.5	3.9	2.9	2.6	1.65	.75	.45	.2	.2
16.....	.55	2.3	4.0	2.5	3.6	2.7	1.65	1.45	.75	.45	.2	.3
17.....	.55	2.2	3.8	2.5	3.3	2.7	1.65	1.45	.75	.45	.2	.3
18.....	.75	2.2	3.7	2.5	3.7	2.6	1.45	1.25	.75	.45	.4	.3
19.....	.85	4.3	3.2	2.6	6.2	2.6	1.35	1.15	.75	.4	.2	.3
20.....	1.25	7.2	3.0	2.6	6.0	2.6	1.35	1.15	.75	.4	.2	.6
21.....	1.35	6.4	2.9	2.7	5.9	2.6	1.35	1.05	.75	.4	.2	.65
22.....	1.25	7.8	2.6	2.7	5.8	2.6	1.35	1.05	.75	.4	.2	.6
23.....	1.05	11.4	2.5	3.2	6.0	4.7	1.35	1.05	.65	.4	.2	.5
24.....	.85	16.0	2.5	3.5	6.2	4.3	1.25	.95	.65	.35	.2	.5
25.....	.75	8.8	2.5	3.6	6.5	3.8	1.05	.95	.65	.35	.2	.4
26.....	.75	6.0	2.5	4.1	5.9	3.3	1.05	.95	.65	.35	.2	.3
27.....	.75	5.1	2.5	4.3	5.5	3.1	1.05	.95	.65	.35	.2	.3
28.....	.65	5.2	2.5	5.6	6.7	2.9	.95	.95	.65	.35	.4	.3
29.....	.65	4.5	2.6	5.8	.....	2.7	.95	.95	.65	.35	.3	.3
30.....	.65	4.1	2.6	4.6	.....	2.6	.95	.85	.65	.35	.2	.25
31.....	1.15	.....	2.7	3.5	.....	2.5	.....	.85	.....	.3	.2	.....

NOTE.—Gage heights between 2.5 and about 4 feet in 1910 subject to considerable uncertainty, as this portion of the gage was very indistinctly graduated during the early part of 1910. The low-water gage heights are good.

Daily discharge, in second-feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1905.			1905.			1905.		
1.....		58	11.....		52	21.....		.....
2.....		58	12.....		52	22.....		.....
3.....		58	13.....		58	23.....		68
4.....		58	14.....		58	24.....		68
5.....		58	15.....		58	25.....		68
6.....		58	16.....		58	26.....		68
7.....		58	17.....		58	27.....		68
8.....		52	18.....		58	28.....		68
9.....		52	19.....		58	29.....		58
10.....		52	20.....		58	30.....		58
						31.....		58

Daily discharge, in second-feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	115	345	2,270	3,450	1,760	4,450	5,160	1,210	2,990	555	147	68
2.	115	285	2,410	2,410	1,760	3,450	3,450	1,000	2,270	555	147	68
3.	115	232	2,550	2,130	1,210	2,340	2,700	905	2,130	480	147	68
4.	115	147	2,840	2,140	1,210	2,700	2,410	720	2,410	480	147	68
5.	115	147	2,140	2,550	1,210	2,410	2,000	720	2,000	555	147	68
6.	115	115	1,760	2,410	1,000	2,410	1,880	720	1,880	410	147	68
7.	635	115	2,000	2,000	1,000	2,270	1,760	720	2,000	410	115	68
8.	1,530	115	2,700	1,760	905	2,270	1,420	635	2,270	410	115	68
9.	720	89	1,880	5,720	810	2,140	1,530	635	3,140	410	115	68
10.	410	89	1,420	3,940	810	2,000	1,420	635	2,410	345	115	68
11.	345	89	1,210	3,300	810	1,760	1,210	635	2,000	345	115	68
12.	232	89	1,210	3,140	720	1,530	1,100	555	1,760	345	115	115
13.	186	89	1,100	6,480	555	1,310	905	555	1,760	345	115	115
14.	147	68	720	4,800	555	1,210	905	635	1,530	285	89	232
15.	186	68	555	4,450	905	1,100	810	1,420	1,530	285	89	345
16.	1,100	68	720	7,070	635	1,000	720	1,760	1,530	232	89	345
17.	720	89	720	10,700	810	810	720	1,420	2,270	232	115	232
18.	555	147	720	6,480	1,210	905	720	1,210	1,880	232	115	232
19.	555	345	1,100	4,800	4,800	905	635	1,210	1,530	232	115	186
20.	410	1,530	2,550	3,450	3,450	1,100	635	1,210	1,210	232	115	115
21.	345	1,100	2,410	2,840	8,070	2,000	635	1,100	1,210	232	115	115
22.	345	720	1,760	2,410	6,880	2,270	720	1,640	1,000	232	115	115
23.	285	555	1,210	3,140	6,100	1,880	810	2,270	720	232	115	147
24.	232	555	1,100	6,480	9,670	1,760	810	1,760	810	232	115	186
25.	285	480	905	4,620	9,670	1,640	905	1,530	810	232	89	345
26.	1,210	345	1,420	3,450	6,290	1,420	1,210	1,530	720	186	68	232
27.	905	1,420	3,450	3,140	7,670	1,420	1,100	1,310	720	186	68	186
28.	720	1,530	2,840	3,140	5,720	1,310	2,000	1,760	720	186	68	147
29.	555	1,100	2,140	2,000	-----	1,210	2,000	15,000	720	186	68	147
30.	480	2,410	2,410	2,000	-----	1,210	1,420	7,070	635	186	68	115
31.	345	-----	5,720	1,880	-----	2,410	-----	4,620	-----	186	68	-----
1906-7.												
1.	186	232	635	1,870	13,000	2,730	2,870	765	235	235	115	115
2.	186	232	635	1,760	12,300	2,730	2,450	765	235	235	115	115
3.	147	232	720	4,800	16,700	2,200	2,200	765	235	235	115	93
4.	115	345	720	27,700	22,400	2,200	1,870	557	235	235	115	93
5.	186	720	905	12,300	24,700	1,650	2,200	435	235	200	115	93
6.	186	810	1,000	6,730	14,800	1,450	7,090	435	235	200	115	93
7.	115	1,100	1,530	4,800	8,800	1,450	25,300	375	235	200	115	93
8.	115	1,210	2,270	3,430	5,830	1,250	11,700	375	235	200	235	115
9.	115	1,760	2,410	2,870	4,800	1,080	7,270	375	235	200	275	115
10.	147	1,210	2,990	2,450	3,570	1,250	6,550	375	235	200	275	93
11.	147	1,210	2,410	2,090	3,150	1,160	6,010	375	275	168	275	93
12.	232	1,210	2,000	2,090	2,590	1,160	5,830	435	557	168	235	93
13.	345	1,210	1,530	1,870	2,200	1,080	3,850	435	557	168	168	93
14.	345	2,410	1,530	1,870	1,870	1,080	3,150	375	765	168	168	93
15.	345	2,990	1,320	1,450	1,550	1,080	2,590	375	690	168	168	93
16.	480	6,100	3,940	1,350	1,450	1,160	2,090	375	690	168	140	235
17.	720	4,450	3,450	1,350	1,450	2,590	1,870	325	690	140	140	235
18.	1,100	5,720	2,410	1,550	1,250	9,600	1,450	325	690	140	140	200
19.	1,000	5,160	2,700	1,450	1,160	6,010	1,450	325	620	140	140	200
20.	905	2,410	4,620	1,450	1,160	9,600	1,450	325	495	140	140	200
21.	720	3,300	3,940	1,250	1,080	6,010	1,450	325	325	140	115	200
22.	635	2,410	2,410	1,080	1,080	4,800	1,350	435	325	140	115	168
23.	635	2,410	2,410	1,080	1,350	4,800	1,250	435	325	140	115	168
24.	345	1,880	2,990	2,000	1,450	4,310	1,250	495	325	140	115	140
25.	345	1,530	3,940	2,590	2,450	3,850	1,250	495	325	140	235	115
26.	345	1,210	5,720	2,730	2,590	3,290	1,080	435	325	115	235	115
27.	345	1,210	4,280	3,150	1,650	2,730	1,080	435	275	115	200	115
28.	285	1,210	2,840	5,830	1,650	2,590	995	375	275	115	140	93
29.	285	905	1,880	11,900	-----	2,590	995	375	275	115	115	168
30.	285	720	1,880	9,800	-----	2,450	917	275	235	115	115	235
31.	232	-----	2,840	9,400	-----	2,730	-----	-----	-----	115	115	-----

Daily discharge, in second-feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	325	200	995	6,190	1,450	1,250	2,320	1,350	1,250	1,400	172	220
2.....	325	275	765	5,830	1,250	995	2,200	1,350	1,250	1,350	172	172
3.....	275	495	765	4,470	995	995	1,980	1,160	1,760	1,350	151	172
4.....	235	495	690	3,570	1,650	917	2,320	995	1,650	1,250	151	172
5.....	235	435	765	3,290	1,980	917	1,980	995	1,450	995	151	172
6.....	140	275	620	3,290	2,730	765	1,550	1,250	1,450	765	151	220
7.....	200	275	495	2,870	4,800	620	1,450	1,350	1,250	690	151	220
8.....	168	275	620	3,150	3,710	1,350	1,350	1,200	1,200	526	130	172
9.....	168	275	765	8,030	3,710	1,450	1,250	1,160	1,160	320	130	112
10.....	140	275	995	4,800	3,570	1,550	1,080	765	1,160	270	220	151
11.....	140	235	1,550	4,150	3,290	1,500	995	728	995	270	220	112
12.....	140	235	2,090	4,150	3,010	1,500	1,250	995	878	270	270	112
13.....	140	235	12,100	4,000	3,010	1,450	1,250	1,080	690	220	270	112
14.....	140	235	7,270	3,710	3,010	1,450	1,250	1,160	690	220	220	112
15.....	140	275	5,650	3,710	2,730	2,090	1,160	1,350	765	220	220	112
16.....	140	325	4,800	3,430	2,730	3,850	1,160	1,450	802	220	220	80
17.....	115	620	4,310	3,430	2,450	5,480	1,080	2,200	917	220	220	80
18.....	115	765	4,150	2,870	2,320	5,310	995	3,150	1,160	220	220	80
19.....	115	917	3,710	2,590	2,320	3,850	995	3,570	1,350	220	172	80
20.....	115	995	3,710	2,590	1,980	2,450	995	4,310	1,350	196	172	80
21.....	115	1,450	3,290	2,320	1,980	2,320	917	4,000	1,870	196	151	80
22.....	115	1,980	17,200	2,200	1,980	1,760	1,250	3,710	2,590	172	151	54
23.....	93	2,730	22,400	2,200	1,870	1,550	1,450	2,730	2,590	172	151	54
24.....	93	2,590	16,000	1,980	1,870	1,350	2,590	2,450	2,320	172	130	54
25.....	93	5,310	17,200	1,980	1,650	1,550	2,320	1,980	1,980	172	130	54
26.....	93	4,310	25,600	1,870	1,450	1,300	1,980	1,760	1,980	172	130	54
27.....	93	3,290	14,800	1,650	1,350	1,450	1,650	1,760	1,650	196	130	54
28.....	93	2,730	8,800	1,650	1,250	1,450	1,550	1,650	1,550	196	130	54
29.....	115	1,980	8,030	1,550	1,250	1,450	1,550	1,450	1,550	196	112	36
30.....	168	1,160	7,650	1,550	.....	1,450	1,350	1,450	1,450	172	220	36
31.....	200	.....	6,550	1,450	.....	2,200	.....	1,450	.....	172	220	.....
1908-9.												
1.....	112	588	526	1,870	1,980	5,480	1,450	465	1,450	196	151	54
2.....	151	526	526	1,650	1,980	5,480	1,980	465	728	151	151	54
3.....	151	465	465	2,590	2,590	5,650	1,760	526	655	151	151	54
4.....	151	405	465	7,090	2,870	6,010	1,450	588	588	151	151	54
5.....	112	405	465	7,270	3,150	4,150	1,450	526	526	151	130	54
6.....	112	245	465	8,410	2,590	3,850	728	526	526	405	112	54
7.....	112	245	465	13,200	2,520	3,200	728	526	465	655	112	54
8.....	54	295	465	15,700	2,450	2,870	588	465	465	465	112	54
9.....	54	245	465	7,460	2,320	3,150	526	405	405	405	112	54
10.....	54	245	465	4,630	2,320	2,870	526	405	405	405	112	54
11.....	36	245	435	3,150	2,320	2,450	465	526	405	405	112	54
12.....	36	245	405	2,590	2,450	2,090	405	526	405	405	65	54
13.....	80	245	526	1,980	4,310	1,980	348	526	405	375	54	54
14.....	348	245	728	1,870	4,470	1,980	348	465	405	348	54	54
15.....	5,220	196	655	10,000	4,000	1,760	348	465	348	295	54	54
16.....	3,290	196	655	24,400	4,000	1,650	348	465	348	196	54	54
17.....	878	196	526	10,400	3,850	1,760	295	465	405	151	54	54
18.....	802	196	526	16,000	6,370	1,650	526	405	348	151	54	54
19.....	802	878	465	9,400	7,270	1,550	588	405	348	151	54	54
20.....	728	802	465	14,800	6,550	1,450	588	405	348	130	54	54
21.....	728	3,850	465	17,200	7,270	802	526	405	295	112	54	54
22.....	526	2,320	526	13,600	5,310	728	526	405	295	112	54	54
23.....	526	3,290	655	7,460	3,710	588	465	405	295	112	54	54
24.....	526	3,570	3,290	5,310	3,850	526	465	348	245	112	54	54
25.....	526	2,590	2,200	4,000	9,200	465	465	348	245	151	54	54
26.....	588	1,980	5,140	2,870	4,800	465	465	405	245	172	54	54
27.....	465	878	3,570	2,450	5,140	465	526	465	245	196	54	54
28.....	465	655	3,290	2,320	5,650	465	588	588	220	196	54	54
29.....	348	526	4,800	2,200	.....	526	526	802	196	172	54	152
30.....	405	526	3,430	1,980	.....	526	526	1,550	196	151	54	196
31.....	526	.....	2,590	1,980	.....	728	.....	1,450	.....	151	54	.....

Daily discharge, in second-feet, of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	245	1,450	8,030	3,150	2,450	11,700	1,450	295	245	151	58	46
2.....	245	3,150	5,140	2,450	2,320	10,200	1,450	295	196	151	58	46
3.....	245	1,700	4,150	1,870	2,320	7,460	1,550	405	196	115	52	46
4.....	245	1,450	3,290	1,790	2,090	6,190	1,550	405	196	115	52	46
5.....	196	348	3,010	1,450	1,870	5,140	1,550	348	196	115	52	46
6.....	196	196	3,150	1,450	1,760	4,470	1,550	348	196	115	46	46
7.....	151	728	2,730	2,450	1,760	3,710	1,550	348	196	115	46	58
8.....	151	1,450	4,000	2,200	1,760	3,010	1,550	295	196	100	46	46
9.....	151	1,870	6,000	2,450	1,760	2,870	1,650	295	196	100	46	46
10.....	151	3,570	6,550	2,730	1,980	2,590	1,650	3,290	196	100	46	46
11.....	112	3,150	4,800	2,200	1,980	2,320	1,650	2,730	196	88	46	46
12.....	112	1,980	6,190	1,760	1,980	2,090	1,550	1,870	196	88	46	46
13.....	112	1,450	6,910	1,450	2,200	1,980	1,550	1,550	196	88	46	46
14.....	112	1,650	5,830	1,450	3,290	1,980	1,550	728	196	88	46	46
15.....	112	1,350	4,150	1,450	3,150	1,870	1,550	728	196	88	46	46
16.....	112	1,250	3,290	1,450	2,730	1,650	728	588	196	88	46	58
17.....	112	1,160	3,010	1,450	2,320	1,650	728	588	196	88	46	58
18.....	196	1,160	2,870	1,450	2,870	1,550	588	465	196	88	77	58
19.....	245	3,710	2,200	1,550	6,910	1,550	526	405	196	77	46	58
20.....	465	8,800	1,980	1,550	6,550	1,550	526	405	196	77	46	130
21.....	526	7,270	1,870	1,650	6,370	1,550	526	348	196	77	46	151
22.....	465	10,000	1,550	1,650	6,190	1,550	526	348	196	77	46	130
23.....	348	18,200	1,450	2,200	6,550	4,310	526	348	151	77	46	100
24.....	245	31,300	1,450	2,590	6,910	3,710	465	295	151	68	46	100
25.....	196	12,100	1,450	2,730	7,460	3,010	348	295	151	68	46	77
26.....	196	6,550	1,450	3,430	6,370	2,320	348	295	151	68	46	58
27.....	196	4,970	1,450	3,710	5,650	2,090	348	295	151	68	46	58
28.....	151	5,140	1,450	5,830	7,840	1,870	295	295	151	68	77	58
29.....	151	4,000	1,550	6,190	.....	1,650	295	295	151	68	58	58
30.....	151	3,430	1,550	4,150	.....	1,550	295	245	151	68	46	52
31.....	405	.....	1,650	2,590	.....	1,450	.....	245	.....	58	46	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1905 and 1906, well defined between 70 and 2,500 second-feet; Jan. 1 to Dec. 23, 1907, fairly well defined below 15,000 second-feet; Dec. 24, 1907, to Dec. 31, 1908, fairly well defined between 65 and 15,000 second-feet; 1909 and 1910, well defined between 40 and 15,000 second-feet.

Monthly discharge of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910.

[Drainage area, 690 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
August 23-31.....	68	58	64.7	0.094	0.03	1,150	B.
September 1-20.....	58	52	56.5	.082	.06	2,240	B.
1905-6.							
October.....	1,530	115	456	.661	.76	28,000	B.
November.....	2,410	68	483	.701	.78	28,700	B.
December.....	5,720	555	1,870	2.71	3.12	115,000	C.
January.....	10,700	1,760	3,820	5.54	6.39	235,000	A.
February.....	9,670	555	3,080	4.46	4.64	171,000	A.
March.....	4,450	810	1,790	2.59	2.99	110,000	A.
April.....	5,160	635	1,460	2.12	2.36	86,900	A.
May.....	15,000	555	1,870	2.71	3.12	115,000	A.
June.....	3,140	635	1,620	2.35	2.62	96,400	A.
July.....	555	186	311	.451	.52	19,100	A.
August.....	147	68	109	.158	.18	6,700	A.
September.....	345	68	147	.213	.24	8,750	A.
The year.....	15,000	68	1,410	2.04	27.72	1,020,000	

Monthly discharge of Coast Fork of Willamette River near Goshen, Oreg., for 1905-1910—
Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906-7.							
October.....	1,100	115	373	0.541	0.62	22,900	A.
November.....	6,100	232	1,920	2.78	3.11	114,000	A.
December.....	5,720	635	2,410	3.49	4.02	148,000	A.
January.....	27,700	1,080	4,390	6.36	7.33	270,000	B.
February.....	24,700	1,080	5,640	8.17	8.51	313,000	B.
March.....	9,600	1,080	2,990	4.33	4.99	184,000	B.
April.....	25,300	917	3,700	5.36	5.98	220,000	B.
May.....	765	235	426	.617	.71	26,200	B.
June.....	765	235	380	.551	.61	22,600	B.
July.....	235	115	164	.238	.27	10,100	B.
August.....	275	115	159	.230	.27	9,780	B.
September.....	235	93	136	.197	.22	8,000	B.
The year.....	27,700	93	1,860	2.70	36.64	1,350,000	
1907-8.							
October.....	325	93	154	.223	.26	9,470	B.
November.....	5,310	200	1,190	1.72	1.92	70,800	B.
December.....	25,600	495	6,590	9.55	11.01	405,000	B.
January.....	8,030	1,450	3,240	4.70	5.42	199,000	B.
February.....	4,800	995	2,320	3.36	3.62	133,000	B.
March.....	5,480	620	1,860	2.70	3.11	114,000	B.
April.....	2,590	917	1,510	2.19	2.44	89,500	B.
May.....	4,310	728	1,800	2.61	3.01	111,000	B.
June.....	2,590	690	1,420	2.06	2.30	84,500	B.
July.....	1,400	172	425	.616	.71	26,100	B.
August.....	270	112	175	.254	.29	10,800	B.
September.....	220	36	109	.158	.18	6,490	B.
The year.....	25,600	36	1,730	2.51	34.27	1,260,000	
1908-9.							
October.....	5,220	36	610	.884	1.02	37,500	B.
November.....	3,850	196	910	1.32	1.47	54,100	B.
December.....	5,140	405	1,290	1.87	2.16	79,300	B.
January.....	24,400	1,650	7,280	10.6	12.22	448,000	B.
February.....	9,200	1,980	4,120	5.97	6.22	229,000	B.
March.....	6,010	465	2,170	3.14	3.62	133,000	B.
April.....	1,980	295	684	.991	1.11	40,700	B.
May.....	1,550	348	539	.781	.90	33,100	B.
June.....	1,450	196	415	.601	.67	24,700	B.
July.....	655	112	238	.345	.40	14,600	B.
August.....	151	54	80.5	.117	.13	4,950	C.
September.....	196	54	62.0	.090	.10	3,600	C.
The year.....	24,400	36	1,530	2.22	30.02	1,100,000	
1909-10.							
October.....	526	112	216	.313	.36	13,300	B.
November.....	31,300	196	4,820	6.99	7.80	287,000	B.
December.....	9,600	1,450	3,480	5.04	5.81	214,000	B.
January.....	6,190	1,450	2,400	3.48	4.01	148,000	B.
February.....	7,840	1,760	3,840	5.57	5.80	213,000	B.
March.....	11,700	1,450	3,240	4.70	5.42	199,000	B.
April.....	1,650	295	1,010	1.46	1.63	60,100	C.
May.....	3,290	245	635	.920	1.06	39,000	C.
June.....	245	151	186	.270	.30	11,100	B.
July.....	151	58	90.3	.131	.15	5,550	B.
August.....	77	46	49.7	.072	.08	3,060	B.
September.....	151	46	63.5	.092	.10	3,780	B.
The year.....	31,300	46	1,650	2.39	32.52	1,200,000	

McKENZIE RIVER NEAR McKENZIE BRIDGE, OREG.

Location.—In sec. 17, T. 16 S., R. 6 E., at Paradise ranger station, 2 miles above McKinzie Bridge, 3 miles below mouth of Lost Creek, and 4 miles above Horse Creek.

Records available.—August 8 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Rocky; practically permanent.

Discharge measurements.—Made from the highway bridge at McKinzie Bridge.

Estimates of discharge withheld for additional data.

Daily gage height, in feet, of McKenzie River near McKinzie Bridge, Oreg., for 1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1.....			11.....	1.7		21.....		
2.....			12.....	1.65		22.....		
3.....			13.....			23.....		
4.....			14.....			24.....		
5.....			15.....			25.....		
6.....			16.....			26.....		1.55
7.....			17.....			27.....		1.55
8.....	1.75		18.....	1.7		28.....		1.55
9.....	1.75		19.....			29.....		1.55
10.....	1.75		20.....			30.....		1.55
						31.....		

McKENZIE RIVER AT MARTINS RAPIDS, NEAR VIDA, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 36, T. 16 S., R. 2 E., at dam site at head of Martins Rapids, about 3 miles above Gate Creek, about $2\frac{1}{2}$ miles east of Vida.

Records presented.—June 25 to September 30, 1910.

Drainage area.—844 square miles.

Gage.—Vertical staff.

Channel.—Practically permanent.

Discharge measurements.—Made from boat.

Cooperation.—Entire record furnished by H. M. Bylesby & Co.

Discharge measurements of McKenzie River at Martins Rapids, near Vida, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
June 25	W. T. Hanna.....	Feet. 2.9	Sec.-ft. 2,480	July 18	W. T. Hanna.....	Feet. 2.5	Sec.-ft. 1,960
July 7	.....do.....	2.6	2,200	19	.....do.....	2.5	2,020

NOTE.—Measurements made from boat. No gage heights for measurements reported; observer's reading for day used, except that of June 25, which is estimated from comparisons with Springfield station.

Daily gage height, in feet, of McKenzie River at Martins Rapids, near Vida, Oreg., for 1910

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1.....	2.7	2.4	2.3	11.....	2.6	2.3	2.2	21.....	2.5	2.3	2.3
2.....	2.7	2.4	2.3	12.....	2.6	2.3	2.2	22.....	2.5	2.3	2.2
3.....	2.7	2.4	2.3	13.....	2.5	2.3	2.2	23.....	2.5	2.3	2.2
4.....	2.7	2.4	2.3	14.....	2.5	2.3	2.3	24.....	2.4	2.3	2.2
5.....	2.7	2.4	2.3	15.....	2.5	2.3	2.2	25.....	2.4	2.3	2.2
6.....	2.6	2.4	2.3	16.....	2.5	2.3	2.2	26.....	2.4	2.3	2.2
7.....	2.6	2.4	2.3	17.....	2.5	2.3	2.2	27.....	2.4	2.3	2.2
8.....	2.6	2.4	2.3	18.....	2.5	2.3	2.2	28.....	2.4	2.3	2.2
9.....	2.6	2.4	2.2	19.....	2.5	2.3	2.2	29.....	2.4	2.3	2.2
10.....	2.6	2.3	2.2	20.....	2.5	2.3	2.3	30.....	2.4	2.3	2.2
								31.....	2.4	2.3	.....

MCKENZIE RIVER NEAR SPRINGFIELD, OREG.

Location.—In sec. 32, T. 17 S., R. 1 W., at Hendrick's ferry (an old river crossing replaced by a highway-bridge in 1908), 3 miles below Walterville, 3 miles above Camp Creek, and 11 miles above Springfield.

Records presented.—September 12, 1905, to September 30, 1910.

Drainage area.—960 square miles.

Gage.—Vertical staff on left bank. In 1912 it was found that it had settled 0.87 foot since 1905, 0.76 foot since 1908, and 0.35 foot since 1910. All readings beginning November 24, 1909 have been corrected to the new datum; those prior to that date have been left as observed.

Channel.—Coarse gravel and small bowlders; shifting.

Discharge measurements.—Made from cable 200 feet below gage.

Accuracy.—Results good except for short periods during which channel was obstructed by logs.

Discharge measurements of McKenzie River near Springfield, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Sept. 12	L. R. Allen.....	1.30	1,570	Aug. 15	J. C. Stevens.....	1.78	2,170
Nov. 10	.....do.....	1.12	1,810	Dec. 19	C. E. Ellsworth.....	2.95	5,460
Dec. 30	.....do.....	2.65	4,900	23	.....do.....	6.92	23,600
1906.				1908.			
Feb. 5	L. R. Allen.....	2.66	5,280	Mar. 17	P. A. Cupper.....	5.82	13,800
Mar. 24	.....do.....	2.14	3,690	19	.....do.....	4.20	9,160
May 4	.....do.....	2.71	5,040	Sept. 22	H. D. McGlashan.....	^a 1.42	1,940
June 7	.....do.....	^a 2.77	5,160	Oct. 9	.....do.....	.90	1,820
July 26	.....do.....	^a 1.40	2,250				
Aug. 15	.....do.....	^a 1.40	1,960	1910.			
Sept. 18	I. E. Oakes.....	1.05	1,860	Aug. 6	Henshaw and Davenport.....	.97	2,080

^a Discharge relation affected by running logs.

Daily gage height, in feet, of McKenzie River near Springfield, Oreg., for 1905-1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
1.....		11.....		21.....	1.3
2.....		12.....	1.3	22.....	1.3
3.....		13.....	1.35	23.....	1.3
4.....		14.....	1.3	24.....	1.3
5.....		15.....	1.3	25.....	1.7
6.....		16.....	1.3	26.....	1.55
7.....		17.....	1.3	27.....	1.5
8.....		18.....	1.3	28.....	1.5
9.....		19.....	1.3	29.....	1.5
10.....		20.....	1.3	30.....	1.5
				31.....	

Daily gage height, in feet, of McKenzie River near Springfield, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	1.5	1.3	2.0	2.4	3.1	3.3	3.55	2.75	2.85	1.9	1.4	1.4
2	1.5	1.3	2.2	2.2	3.0	3.1	2.85	2.65	2.75	1.85	1.4	1.4
3	1.45	1.25	2.4	2.1	2.9	3.0	2.7	2.65	2.7	1.8	1.4	1.4
4	1.5	1.25	2.45	2.2	2.75	2.85	2.65	2.7	2.7	1.8	1.4	1.4
5	1.55	1.2	2.2	2.3	2.55	2.8	2.5	2.6	2.8	1.75	1.4	1.4
6	1.75	1.2	2.2	2.45	2.5	2.9	2.75	2.6	3.0	1.75	1.4	1.4
7	2.8	1.2	2.9	2.5	2.4	3.0	2.8	2.5	3.25	1.7	1.4	1.4
8	2.3	1.2	2.9	2.5	2.3	3.3	2.9	2.5	3.15	1.7	1.4	1.4
9	1.8	1.1	2.4	3.2	2.2	3.2	3.0	2.5	3.4	1.65	1.4	1.4
10	1.7	1.1	2.2	2.8	2.1	3.15	2.85	2.5	3.2	1.7	1.4	1.4
11	1.4	1.1	2.0	3.0	2.1	2.85	2.7	2.45	3.05	1.8	1.4	1.4
12	1.45	1.1	1.9	3.1	2.05	2.7	2.6	2.35	2.8	1.85	1.4	1.6
13	1.5	1.1	1.85	3.3	2.0	2.6	2.55	2.25	2.7	1.95	1.4	1.8
14	1.7	1.1	1.8	3.05	2.0	2.4	2.55	2.7	3.1	2.05	1.45	2.15
15	2.3	1.1	1.75	2.85	2.1	2.3	2.7	2.6	3.45	2.0	1.4	2.25
16	1.9	1.1	1.75	4.25	2.15	2.2	2.75	2.55	3.4	2.05	1.4	1.8
17	1.5	1.1	2.35	3.7	2.4	2.15	2.8	2.45	3.1	1.5	1.4	1.2
18	1.9	1.3	2.2	3.5	3.0	2.1	2.75	2.4	2.95	1.4	1.4	1.1
19	1.6	1.8	2.1	3.2	3.95	2.0	2.7	2.35	2.8	1.4	1.4	1.05
20	1.5	1.75	2.2	2.95	4.6	2.0	2.35	2.35	2.45	1.45	1.4	1.25
21	1.4	1.6	1.9	2.5	4.2	2.1	2.5	2.55	2.3	1.45	1.4	1.2
22	1.4	1.55	1.95	2.95	4.05	2.1	2.55	2.6	2.2	1.5	1.4	1.15
23	1.3	1.4	1.8	4.9	4.1	2.0	2.85	2.55	2.15	1.45	1.4	1.1
24	1.3	1.35	1.85	4.45	4.3	2.15	3.0	2.5	2.1	1.45	1.4	1.1
25	1.85	1.25	1.7	4.2	4.05	2.24	3.15	2.5	2.05	1.45	1.4	1.1
26	2.1	1.8	3.4	3.6	3.9	2.5	2.9	2.55	2.0	1.45	1.4	1.05
27	1.75	1.8	3.1	3.35	3.6	2.55	2.85	2.45	2.0	1.45	1.4	1.05
28	1.6	1.75	2.6	3.2	3.45	2.5	2.9	3.7	2.05	1.4	1.4	1.05
29	1.5	1.9	2.24	3.0	.....	2.5	2.8	3.65	2.0	1.4	1.4	1.0
30	1.4	2.3	2.8	3.15	.....	2.8	2.75	3.45	1.95	1.4	1.4	1.0
31	1.35	.....	2.7	3.3	.....	3.5	.....	3.0	.....	1.4	.....	.....
1906-7.												
1	1.0	1.3	2.1	2.85	6.05	3.3	3.2	3.0	2.8	2.25	1.8	1.75
2	1.15	1.3	2.0	4.4	6.4	3.3	3.15	3.0	2.75	2.25	1.8	1.75
3	1.15	1.3	1.9	6.85	9.6	3.3	3.25	3.0	2.75	2.2	1.8	1.75
4	1.1	1.4	1.95	6.45	11.5	3.3	3.15	3.0	2.75	2.2	1.8	1.7
5	1.1	1.5	2.0	5.45	11.75	3.25	3.25	3.0	2.8	2.2	1.8	1.7
6	1.1	1.55	2.05	4.3	8.3	3.25	3.7	3.0	2.8	2.15	1.8	1.7
7	1.05	1.35	3.1	3.15	6.4	3.25	7.5	3.0	2.9	2.15	1.8	1.7
8	1.05	4.6	2.95	4.1	5.3	3.2	6.6	3.0	2.5	2.1	2.0	1.7
9	1.0	3.2	2.75	2.9	5.0	3.15	5.1	3.0	2.8	2.1	2.0	1.7
10	1.0	3.7	2.7	2.8	4.8	3.1	5.1	3.2	2.9	2.1	1.9	1.7
11	1.0	4.4	2.6	2.7	4.65	3.0	4.6	3.2	2.85	2.05	1.85	1.65
12	1.3	3.0	3.1	2.55	4.5	3.0	4.55	3.2	2.85	2.05	1.85	1.65
13	1.15	5.6	3.2	2.4	4.35	3.0	4.35	3.1	2.8	2.0	1.8	1.65
14	1.25	6.5	3.2	2.35	4.2	2.9	4.2	3.0	2.8	2.0	1.8	1.65
15	1.3	6.5	2.95	2.25	4.05	2.9	4.0	3.0	2.7	2.0	1.8	1.65
16	1.95	6.2	2.9	2.25	3.8	2.8	3.85	3.0	2.6	2.0	1.75	1.65
17	2.6	5.35	2.9	2.15	3.7	3.9	3.65	3.0	2.6	1.95	1.75	1.65
18	2.3	4.3	2.8	2.1	3.6	3.6	4.05	3.0	2.4	1.95	1.75	1.6
19	2.2	4.1	2.75	2.1	3.55	4.0	4.0	3.25	2.4	1.95	1.75	1.6
20	1.9	4.0	4.0	2.05	3.4	3.8	4.1	3.2	2.45	1.9	1.75	1.6
21	1.6	3.9	6.0	2.05	3.35	3.5	3.9	3.2	2.45	1.9	1.75	1.6
22	1.45	3.6	4.9	2.05	3.35	3.4	3.85	3.3	2.5	1.9	1.75	1.65
23	1.4	3.3	4.85	2.05	3.35	3.3	3.65	3.1	2.45	1.9	1.8	1.65
24	1.4	3.2	4.65	2.1	3.35	3.2	3.65	3.0	2.4	1.9	1.8	1.65
25	1.35	2.9	4.4	2.25	3.40	3.15	3.6	3.0	2.35	1.9	1.85	1.65
26	1.7	2.6	4.15	2.35	3.55	3.2	3.5	2.95	2.35	1.85	1.85	1.65
27	2.0	2.55	3.9	2.55	3.45	3.2	3.3	2.95	2.3	1.85	1.8	1.65
28	1.7	2.45	3.65	4.1	3.35	3.2	3.2	2.9	2.3	1.85	1.75	1.65
29	1.8	2.3	3.45	5.45	.....	3.2	3.1	2.9	2.25	1.85	1.75	1.7
30	1.6	2.2	3.2	5.45	.....	3.25	3.05	2.85	2.25	1.85	1.75	1.7
31	1.8	.....	2.95	5.6	.....	3.2	.....	2.85	.....	1.85	.....	.....

Daily gage height, in feet, of McKenzie River near Springfield, Oreg., for 1905-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1.65	1.65	2.9	3.8	2.4	2.35	2.95	3.05	2.45	2.1	1.4	1.2
2.....	1.65	1.65	2.8	3.6	2.45	2.35	2.95	3.0	2.5	2.1	1.35	1.15
3.....	1.65	1.7	2.7	3.45	2.5	2.25	2.9	3.0	2.5	2.1	1.3	1.15
4.....	1.65	1.8	2.55	3.4	2.6	2.25	2.9	2.9	2.5	2.0	1.3	1.15
5.....	1.65	1.6	2.4	3.35	3.2	2.2	2.9	2.8	2.4	1.9	1.3	1.1
6.....	1.65	1.55	2.45	3.3	3.2	2.2	2.75	2.85	2.4	1.85	1.3	1.1
7.....	1.6	1.55	2.5	3.3	3.0	2.2	2.6	3.2	2.4	1.8	1.3	1.15
8.....	1.6	1.55	2.7	3.25	2.9	2.05	2.6	3.0	2.55	1.8	1.3	1.1
9.....	1.6	1.5	2.8	4.1	2.9	2.1	2.7	3.0	2.7	1.8	1.25	1.1
10.....	1.6	1.65	2.9	3.7	2.8	2.2	2.8	2.8	2.8	1.7	1.25	1.15
11.....	1.55	1.7	3.4	3.5	2.7	2.2	2.85	2.8	2.8	1.7	1.25	1.2
12.....	1.55	1.85	3.45	3.45	2.6	2.2	2.9	2.75	2.8	1.8	1.25	1.2
13.....	1.55	2.0	5.3	3.4	2.55	2.2	2.9	2.7	2.6	1.8	1.3	1.2
14.....	1.55	1.85	4.7	3.4	2.5	2.2	3.0	2.6	2.5	1.8	1.25	1.25
15.....	1.6	1.8	4.2	3.3	2.5	6.3	3.15	2.9	2.5	1.75	1.25	1.3
16.....	1.6	1.8	3.45	3.3	2.6	7.18	3.25	3.2	2.4	1.5	1.25	1.35
17.....	1.6	1.75	3.2	3.0	2.55	5.75	3.35	3.15	2.3	1.45	1.25	1.35
18.....	1.65	1.7	3.0	2.9	2.5	4.65	3.45	3.3	2.35	1.4	1.25	1.4
19.....	1.65	2.05	2.95	3.2	2.5	4.2	3.5	3.5	2.4	1.4	1.25	1.4
20.....	1.65	2.3	3.8	3.9	2.4	3.7	3.4	3.5	2.5	1.4	1.2	1.4
21.....	1.7	2.7	4.45	3.55	2.35	3.55	3.25	3.3	2.9	1.4	1.2	1.45
22.....	1.7	2.9	8.75	3.3	2.3	3.4	3.1	3.2	3.0	1.4	1.2	1.5
23.....	1.75	3.0	7.2	3.1	2.25	3.25	3.1	3.1	2.6	1.5	1.2	1.5
24.....	1.8	6.5	7.3	2.9	2.2	3.1	4.5	3.0	2.5	1.5	1.15	1.0
25.....	1.9	4.5	8.3	2.85	2.2	3.05	3.8	2.9	2.45	1.5	1.15	1.0
26.....	2.1	4.2	9.1	2.75	2.25	3.0	3.4	2.9	2.4	1.45	1.15	.95
27.....	2.1	3.7	7.3	2.7	2.25	2.9	3.25	2.7	2.4	1.4	1.15	.95
28.....	1.7	3.3	5.3	2.6	2.35	2.9	3.1	2.65	2.3	1.4	1.25	.95
29.....	1.7	3.1	4.6	2.55	2.35	2.85	3.0	2.6	2.2	1.4	1.5	.95
30.....	1.65	3.0	4.2	2.45	.....	2.9	3.05	2.6	2.1	1.4	1.3	.95
31.....	1.65	.....	4.0	2.4	.....	2.95	.....	2.5	.....	1.4	1.25	.....
1908-9.												
1.....	.95	2.0	1.8	2.5	2.7	3.8	2.7	2.35	3.6	1.7	1.4	1.2
2.....	.95	1.8	1.7	2.3	2.6	3.3	2.9	2.35	3.5	1.7	1.4	1.15
3.....	.95	1.75	1.7	2.7	2.75	4.1	2.9	2.5	3.45	1.65	1.45	1.1
4.....	.95	1.6	1.65	4.3	2.75	3.95	2.85	2.8	3.25	1.65	1.4	1.1
5.....	.95	1.5	1.6	4.6	2.75	3.6	2.6	2.9	2.9	1.65	1.4	1.1
6.....	.95	1.5	1.55	4.15	2.65	3.4	2.5	2.5	2.8	2.4	1.35	1.1
7.....	.95	1.4	1.5	5.3	2.55	3.2	2.4	2.45	2.6	2.25	1.3	1.1
8.....	.95	1.35	1.5	4.95	2.45	3.25	2.35	2.4	2.5	1.95	1.3	1.1
9.....	.9	1.35	1.5	4.1	2.5	3.2	2.4	2.5	2.5	1.8	1.35	1.1
10.....	.9	1.3	1.45	3.45	2.5	3.1	2.4	2.5	2.5	1.75	1.35	1.1
11.....	1.0	1.3	1.4	3.2	2.45	2.85	2.35	2.45	2.4	1.7	1.3	1.1
12.....	1.0	1.25	1.45	2.9	2.6	2.8	2.3	2.4	2.4	1.7	1.3	1.1
13.....	1.3	1.25	1.9	2.8	3.0	2.75	2.2	2.4	2.3	1.65	1.3	1.1
14.....	3.0	1.25	1.75	2.8	3.1	2.75	2.25	2.3	2.25	1.65	1.3	1.1
15.....	3.4	1.25	1.6	4.5	3.6	2.7	2.3	2.3	2.15	1.6	1.3	1.1
16.....	2.7	1.2	1.6	6.35	4.5	2.9	2.3	2.3	2.2	1.6	1.3	1.1
17.....	2.1	1.15	1.5	4.25	5.6	3.0	2.2	2.3	2.15	1.6	1.3	1.1
18.....	1.75	1.6	1.5	6.3	5.2	2.75	2.2	2.3	2.1	1.55	1.3	1.1
19.....	1.9	1.55	1.4	6.7	4.7	2.75	2.2	2.35	2.0	1.5	1.3	1.1
20.....	1.9	2.8	1.4	8.2	4.5	2.6	2.2	2.35	1.9	1.5	1.3	1.1
21.....	1.8	2.95	1.45	7.7	3.9	2.5	2.1	2.4	1.9	1.45	1.3	1.1
22.....	1.8	3.7	1.6	6.35	3.6	2.45	2.1	2.5	1.8	1.45	1.3	1.1
23.....	1.7	3.5	2.7	5.05	3.35	2.4	2.1	2.0	1.8	1.45	1.4	1.1
24.....	1.7	3.2	1.5	4.45	4.0	2.35	2.1	2.0	1.8	1.4	1.5	1.1
25.....	1.65	2.8	2.2	4.0	3.6	2.3	2.1	2.0	1.8	1.4	1.5	1.05
26.....	1.65	2.4	3.0	3.6	3.4	2.3	2.1	2.3	1.8	1.4	1.6	1.05
27.....	1.6	2.3	2.7	3.4	3.0	2.35	2.25	2.5	1.75	1.4	1.6	1.05
28.....	1.55	2.1	4.0	3.2	3.9	2.4	2.4	3.1	1.75	1.4	1.2	1.1
29.....	1.55	2.0	3.7	3.1	.....	2.4	2.5	3.2	1.7	1.5	1.2	1.3
30.....	2.0	1.9	3.5	2.95	.....	2.45	2.35	3.5	1.7	1.4	1.2	1.4
31.....	2.0	.....	2.75	2.8	.....	2.45	.....	3.6	.....	1.4	1.2	.....

Daily gage height, in feet, of McKenzie River near Springfield, Oreg., for 1905-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.4	2.45	5.75	2.95	3.75	8.6	2.85	3.25	2.15	1.75	1.45	1.1
2.....	1.35	2.8	6.25	2.95	3.95	8.35	3.15	3.15	2.15	1.7	1.45	1.1
3.....	1.3	3.75	4.35	2.85	3.75	7.05	3.35	3.25	2.1	1.65	1.45	1.15
4.....	1.3	2.5	4.05	2.85	3.35	6.35	3.35	3.25	2.1	1.65	1.45	1.15
5.....	1.2	2.05	4.0	2.75	3.35	6.0	3.45	3.15	2.1	1.65	1.4	1.15
6.....	1.2	2.05	3.85	2.65	3.25	5.75	3.45	3.05	2.05	1.6	1.35	1.2
7.....	1.15	2.0	3.75	2.65	3.05	5.35	3.35	2.95	2.15	1.6	1.35	1.2
8.....	1.1	2.0	3.85	2.65	3.35	4.65	3.35	3.16	2.15	1.6	1.35	1.4
9.....	1.1	2.0	3.85	2.65	3.35	4.45	3.35	3.25	2.15	1.6	1.35	1.4
10.....	1.05	2.3	4.15	2.65	3.95	4.35	3.35	4.25	2.15	1.6	1.35	1.4
11.....	1.05	2.5	5.75	2.55	3.85	4.45	3.35	3.95	2.35	1.6	1.3	1.4
12.....	1.05	2.6	5.85	2.45	4.05	4.55	3.25	3.85	2.35	1.6	1.3	1.15
13.....	1.05	2.5	6.45	2.45	4.05	4.65	3.35	3.35	2.15	1.55	1.3	1.2
14.....	1.05	2.0	6.35	2.35	4.1	4.55	3.25	3.15	2.15	1.55	1.25	1.2
15.....	1.05	1.9	5.75	2.35	3.85	4.35	3.15	3.15	2.35	1.5	1.25	1.2
16.....	1.05	1.7	5.45	2.35	3.75	4.45	3.15	2.85	1.95	1.5	1.25	1.2
17.....	1.05	2.7	4.35	2.35	3.35	4.35	3.25	2.75	1.95	1.5	1.25	1.2
18.....	1.05	5.35	3.85	2.45	3.95	4.25	3.15	2.65	1.95	1.5	1.25	1.2
19.....	1.2	7.3	3.75	3.35	4.15	4.15	3.25	2.55	1.95	1.5	1.25	1.2
20.....	1.3	7.3	3.5	3.15	4.25	4.15	3.35	2.45	1.95	1.5	1.25	1.2
21.....	1.45	4.95	3.45	3.25	3.95	4.05	3.45	2.45	1.85	1.5	1.25	1.2
22.....	1.2	10.8	3.15	3.9	4.15	3.35	3.25	2.45	2.15	1.5	1.25	1.2
23.....	1.2	11.2	2.95	5.0	4.2	3.25	2.75	2.45	2.05	1.45	1.2	1.2
24.....	1.1	9.05	2.95	4.35	4.35	2.65	2.65	2.35	2.05	1.45	1.2	1.2
25.....	1.1	7.05	2.85	4.35	5.35	3.05	3.25	2.35	1.95	1.45	1.2	1.2
26.....	1.2	5.75	2.85	3.95	5.25	2.55	3.35	2.35	1.8	1.45	1.2	1.15
27.....	1.25	5.1	2.85	4.05	5.25	2.45	3.25	2.25	1.75	1.45	1.2	1.15
28.....	1.4	5.45	2.85	3.95	6.75	2.35	3.25	2.25	1.75	1.45	1.2	1.1
29.....	1.5	5.45	2.95	4.1	.....	2.25	3.15	2.25	1.75	1.45	1.15	1.1
30.....	1.5	5.85	3.15	4.15	.....	2.45	3.15	2.25	1.75	1.45	1.15	1.25
31.....	2.45	.....	3.15	4.05	.....	2.55	.....	2.15	.....	1.45	1.15	.....

NOTE.—Gage heights affected by running logs during the summer months.

Daily discharge, in second-feet, of McKenzie River near Springfield, Oreg., for 1905-1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.					
1.....		11.....		21.....	1,570
2.....		12.....		22.....	1,570
3.....		13.....		23.....	1,570
4.....		14.....		24.....	1,570
5.....		15.....		25.....	2,180
6.....		16.....		26.....	1,930
7.....		17.....		27.....	1,860
8.....		18.....		28.....	1,860
9.....		19.....		29.....	1,860
10.....		20.....		30.....	1,860

Daily discharge, in second-feet, of McKenzie River near Springfield, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1,860	2,090	3,410	4,290	6,070	6,630	7,360	5,140	5,400	3,200	2,200	1,930
2.....	1,860	2,090	3,840	3,840	5,800	6,070	5,400	4,880	5,140	3,100	2,180	1,930
3.....	1,780	2,010	4,290	3,620	5,530	5,800	5,010	4,880	5,010	3,000	2,160	1,930
4.....	1,860	2,010	4,400	3,840	5,140	5,400	4,880	5,010	5,010	3,000	2,140	1,930
5.....	1,930	1,930	3,840	4,060	4,640	5,270	4,520	4,760	5,270	2,910	2,120	1,930
6.....	2,260	1,930	3,840	4,400	4,520	5,530	5,140	4,760	5,800	2,910	2,100	1,930
7.....	5,270	1,930	5,530	4,520	4,290	5,800	5,270	4,520	6,490	2,810	2,080	1,930
8.....	4,060	1,930	5,530	4,520	4,060	6,630	5,530	4,520	6,210	2,810	2,060	1,930
9.....	3,000	1,780	4,290	6,350	3,840	6,350	5,800	4,520	6,920	2,720	2,040	1,930
10.....	2,810	1,780	3,840	5,270	3,620	6,210	5,400	4,520	6,350	2,810	2,020	1,930
11.....	2,260	1,780	3,410	5,800	3,620	5,400	5,010	4,400	5,930	3,000	2,000	1,930
12.....	2,350	1,780	3,200	6,070	3,510	5,010	4,760	4,170	5,270	3,100	1,990	2,260
13.....	2,440	1,780	3,100	6,630	3,410	4,760	4,640	3,950	5,010	3,300	1,980	2,620
14.....	2,810	1,780	3,000	5,930	3,410	4,290	4,640	5,010	6,070	3,510	1,970	3,730
15.....	4,060	1,780	2,900	5,400	3,620	4,060	5,010	4,760	7,060	3,410	1,960	4,180
16.....	3,200	1,780	2,900	9,580	3,730	3,840	5,140	4,640	6,920	3,510	1,930	3,200
17.....	2,440	1,780	4,180	7,820	4,290	3,730	5,270	4,400	6,070	2,440	1,930	2,090
18.....	3,200	2,090	3,840	7,210	5,800	3,620	5,140	4,290	5,660	2,260	1,930	1,930
19.....	2,620	3,000	3,620	6,350	8,610	3,410	5,010	4,170	5,270	2,260	1,930	1,860
20.....	2,440	2,900	3,840	5,660	10,800	3,410	4,170	4,170	4,400	2,350	1,930	2,180
21.....	2,260	2,620	3,200	4,520	9,420	3,620	4,520	4,640	4,060	2,350	1,930	2,090
22.....	2,260	2,530	3,300	5,660	8,930	3,620	4,640	4,760	3,840	2,440	1,930	2,010
23.....	2,090	2,260	3,000	11,800	9,090	3,410	5,400	4,640	3,730	2,350	1,930	1,930
24.....	2,090	2,180	3,100	10,300	9,750	3,730	5,800	4,520	3,620	2,350	1,930	1,930
25.....	3,100	2,010	2,810	9,420	8,930	3,930	6,210	4,520	3,510	2,350	1,930	1,930
26.....	3,620	3,000	6,920	7,510	8,450	4,520	5,530	4,640	3,410	2,350	1,930	1,860
27.....	2,900	3,000	6,070	6,770	7,510	4,640	5,400	4,400	3,410	2,350	1,930	1,860
28.....	2,620	2,900	4,760	6,350	7,060	4,520	5,530	7,820	3,510	2,250	1,930	1,860
29.....	2,440	3,200	3,930	5,800	.....	4,520	5,270	7,660	3,410	2,240	1,930	1,780
30.....	2,440	4,060	5,270	6,210	.....	5,270	5,140	7,060	3,300	2,230	1,930	1,780
31.....	2,180	.....	5,010	6,630	.....	7,210	.....	5,800	.....	2,220	1,930	.....
1906-7.												
1.....	1,780	2,260	3,620	4,880	15,100	6,160	5,870	5,300	4,750	3,300	2,270	2,180
2.....	2,010	2,260	3,410	9,580	16,300	6,160	5,720	5,300	4,620	3,300	2,270	2,180
3.....	2,010	2,260	3,200	18,000	28,900	6,160	6,020	5,300	4,620	3,170	2,270	2,180
4.....	1,930	2,440	3,410	16,500	36,800	6,160	5,720	5,300	4,620	3,170	2,270	2,100
5.....	1,930	2,620	3,300	13,000	37,900	6,020	6,020	5,300	4,450	3,170	2,270	2,100
6.....	1,930	2,720	3,520	9,260	23,700	6,020	7,380	5,300	4,280	3,050	2,270	2,100
7.....	1,860	2,350	6,070	5,720	16,300	6,020	20,500	5,300	4,110	3,050	2,270	2,100
8.....	1,860	10,800	5,660	8,620	12,500	5,870	17,100	5,300	3,940	2,930	2,700	2,100
9.....	1,780	6,350	5,140	5,020	11,500	5,720	11,800	5,300	4,750	2,930	2,700	2,100
10.....	1,780	7,820	5,010	4,750	10,900	5,580	11,800	5,870	5,020	2,930	2,470	2,100
11.....	1,780	10,100	4,760	4,480	10,400	5,300	10,200	5,870	4,880	2,820	2,370	2,030
12.....	2,260	5,800	6,070	4,080	9,900	5,300	10,100	5,870	4,880	2,820	2,370	2,030
13.....	2,010	14,200	6,350	3,680	9,420	5,300	9,420	5,580	4,750	2,700	2,270	2,030
14.....	2,180	17,400	6,350	3,550	8,940	5,020	8,940	5,300	4,750	2,700	2,270	2,030
15.....	2,260	17,400	5,660	3,300	8,460	5,020	8,310	5,300	4,480	2,700	2,270	2,030
16.....	3,520	16,400	5,530	3,300	7,690	4,750	7,840	5,300	4,210	2,700	2,180	2,030
17.....	5,010	13,400	5,530	3,050	7,380	8,000	7,220	5,300	4,210	2,580	2,180	2,030
18.....	4,290	9,750	5,270	2,930	7,070	7,070	8,460	5,300	3,680	2,580	2,180	1,960
19.....	4,060	9,090	5,140	2,930	6,920	8,310	8,310	6,020	3,680	2,580	2,180	1,960
20.....	3,410	8,770	8,770	2,820	6,460	7,690	8,620	5,870	3,810	2,470	2,180	1,960
21.....	2,810	8,450	15,600	2,820	6,310	6,760	8,000	5,870	3,810	2,470	2,180	1,960
22.....	2,530	7,510	11,800	2,820	6,310	6,460	7,840	6,160	3,940	2,470	2,180	2,030
23.....	2,440	6,630	11,600	2,820	6,310	6,160	7,220	5,580	3,810	2,470	2,270	2,030
24.....	2,440	6,350	10,900	2,930	6,310	5,870	7,220	5,300	3,680	2,470	2,270	2,030
25.....	2,350	5,530	10,100	3,300	6,460	5,720	7,070	5,300	3,550	2,470	2,370	2,030
26.....	3,000	4,760	9,260	3,550	6,920	5,870	6,760	5,160	3,550	2,370	2,370	2,030
27.....	3,620	4,640	8,450	4,080	6,610	5,870	6,160	5,160	3,420	2,370	2,270	2,030
28.....	3,000	4,400	7,660	8,620	6,310	5,870	5,870	5,020	3,420	2,370	2,180	2,030
29.....	3,200	4,060	7,060	13,000	.....	5,870	5,580	5,020	3,300	2,370	2,180	2,100
30.....	2,810	3,840	6,350	13,000	.....	6,020	5,440	4,880	3,300	2,370	2,180	2,100
31.....	3,200	.....	5,660	13,500	.....	5,870	.....	4,880	.....	2,370	2,180	.....

Daily discharge, in second-feet, of McKenzie River near Springfield, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1	2,030	2,030	5,020	7,770	4,280	4,180	5,490	5,720	4,390	3,680	2,450	2,180
2	2,030	2,030	4,750	7,190	4,390	4,180	5,490	5,600	4,500	3,680	2,380	2,120
3	2,030	2,100	4,480	6,760	4,500	3,980	5,380	5,600	4,500	3,680	2,310	2,120
4	2,030	2,270	4,080	6,620	4,720	3,980	5,380	5,380	4,500	3,480	2,310	2,120
5	2,030	1,960	3,680	6,480	6,080	3,880	5,380	5,160	4,280	3,300	2,310	2,050
6	2,030	1,900	3,810	6,340	6,080	3,880	5,050	5,270	4,280	3,210	2,310	2,050
7	1,960	1,900	3,940	6,340	5,600	3,880	4,720	6,080	4,280	3,120	2,310	2,120
8	1,960	1,900	4,480	6,210	5,380	3,580	4,720	5,600	4,610	3,120	2,310	2,050
9	1,960	1,830	4,750	8,650	5,380	3,680	4,940	5,600	4,630	3,120	2,240	2,050
10	1,960	2,030	5,020	7,480	5,160	3,880	5,160	5,160	4,650	2,940	2,240	2,050
11	1,900	2,100	6,460	6,900	4,940	3,880	5,270	5,160	4,680	2,940	2,240	2,040
12	1,900	2,370	6,610	6,760	4,720	3,880	5,380	5,050	4,700	3,120	2,240	2,030
13	1,900	2,700	12,500	6,620	4,610	3,880	5,380	4,940	4,720	3,120	2,310	2,020
14	1,900	2,370	10,500	6,620	4,500	3,880	5,600	4,720	4,500	3,120	2,240	2,010
15	1,960	2,270	8,940	6,340	4,500	16,000	5,960	5,380	4,500	3,030	2,240	2,000
16	1,960	2,270	6,610	6,340	4,720	19,200	6,210	6,080	4,280	2,600	2,240	1,990
17	1,960	2,180	5,870	5,600	4,610	14,000	6,480	5,960	4,080	2,520	2,240	1,980
18	2,030	2,100	5,300	5,380	4,500	10,400	6,760	6,340	4,180	2,450	2,240	1,970
19	2,030	2,820	5,160	6,080	4,500	8,960	6,900	6,900	4,280	2,450	2,240	1,960
20	2,030	3,420	7,690	8,060	4,280	7,480	6,620	6,900	4,500	2,450	2,180	1,950
21	2,100	4,480	9,740	7,040	4,180	7,040	6,210	6,340	5,380	2,450	2,180	1,940
22	2,100	5,020	25,500	6,340	4,080	6,620	5,840	6,080	5,600	2,450	2,180	1,940
23	2,100	5,300	19,300	5,840	3,980	6,210	5,840	5,840	4,720	2,600	2,180	1,930
24	2,100	16,700	19,700	5,380	3,880	5,840	9,900	5,600	4,500	2,600	2,120	1,930
25	2,100	9,900	23,700	5,270	3,880	5,720	7,770	5,380	4,390	2,600	2,120	1,930
26	2,100	8,940	26,900	5,050	3,980	5,600	6,620	5,380	4,280	2,520	2,120	1,880
27	2,100	7,380	19,700	4,940	3,980	5,380	6,210	4,940	4,280	2,450	2,120	1,880
28	2,100	6,160	12,500	4,720	4,180	5,380	5,840	4,530	4,080	2,450	2,120	1,880
29	2,100	5,580	10,200	4,610	4,180	5,270	5,600	4,720	3,880	2,450	2,600	1,880
30	2,030	5,300	8,940	4,390	.....	5,380	5,720	4,720	3,680	2,450	2,310	1,880
31	2,030	.....	8,310	4,280	.....	5,490	.....	4,500	.....	2,450	2,240	.....
1908-9.												
1	1,880	3,480	3,120	4,500	4,940	7,770	4,940	4,180	7,190	2,940	2,450	2,180
2	1,880	3,120	2,940	4,080	4,720	6,340	5,380	4,180	6,900	2,940	2,450	2,120
3	1,880	3,030	2,940	4,940	5,050	8,650	5,380	4,500	6,760	2,860	2,520	2,050
4	1,880	2,770	2,860	9,270	5,050	8,200	5,270	5,160	6,210	2,860	2,450	2,050
5	1,880	2,600	2,770	10,200	5,050	7,190	4,720	5,380	5,380	2,860	2,450	2,050
6	1,880	2,600	2,680	8,800	4,830	6,620	4,500	4,500	5,160	4,280	2,380	2,050
7	1,880	2,450	2,600	12,500	4,610	6,080	4,280	4,390	4,720	3,980	2,310	2,050
8	1,880	2,380	2,600	11,300	4,390	6,210	4,180	4,280	4,500	3,390	2,310	2,050
9	1,820	2,380	2,600	8,650	4,500	6,080	4,280	4,500	4,500	3,120	2,380	2,050
10	1,820	2,310	2,520	6,760	4,500	5,840	4,280	4,500	4,500	3,030	2,380	2,050
11	1,930	2,310	2,450	6,080	4,390	5,270	4,180	4,390	4,280	2,940	2,310	2,050
12	1,930	2,240	2,520	5,380	4,720	5,160	4,080	4,280	4,280	2,940	2,310	2,050
13	2,310	2,240	3,300	5,160	5,600	5,050	3,880	4,280	4,080	2,860	2,310	2,050
14	5,600	2,240	3,030	5,160	5,840	5,050	3,980	4,080	3,980	2,860	2,310	2,050
15	6,620	2,240	2,770	9,900	7,190	4,940	4,080	4,080	3,780	2,770	2,310	2,050
16	4,940	2,180	2,770	16,200	9,900	5,380	4,080	4,080	3,880	2,770	2,310	2,050
17	3,680	2,120	2,600	9,120	13,500	5,600	3,880	4,080	3,780	2,770	2,310	2,050
18	3,030	2,770	2,600	16,000	12,200	5,050	3,880	4,080	3,680	2,680	2,310	2,050
19	3,300	2,680	2,450	17,400	10,500	5,050	3,880	4,180	3,480	2,600	2,310	2,050
20	3,300	5,160	2,450	23,300	9,900	4,720	3,880	4,180	3,300	2,600	2,310	2,050
21	3,120	5,490	2,520	21,300	8,060	4,500	3,680	4,280	3,300	2,520	2,310	2,050
22	3,120	7,480	2,770	16,200	7,190	4,390	3,680	4,500	3,120	2,520	2,310	2,050
23	2,940	6,900	4,940	11,700	6,480	4,280	3,680	3,480	3,120	2,520	2,450	2,050
24	2,940	6,080	2,600	9,740	8,350	4,180	3,680	3,480	3,120	2,450	2,600	2,050
25	2,860	5,160	3,880	8,350	7,190	4,080	3,680	3,480	3,120	2,450	2,600	1,990
26	2,860	4,280	5,600	7,190	6,620	4,080	3,680	4,080	3,120	2,450	2,770	1,990
27	2,770	4,080	4,940	6,620	5,600	4,180	3,980	4,500	3,030	2,450	2,770	1,990
28	2,680	3,680	8,350	6,080	8,060	4,280	4,280	5,840	3,030	2,450	2,180	2,050
29	2,680	3,480	7,980	5,840	.....	4,280	4,500	6,080	2,940	2,600	2,180	2,310
30	3,480	3,300	6,400	5,490	.....	4,390	4,180	6,900	2,940	2,450	2,180	2,450
31	3,480	.....	5,050	5,160	.....	4,390	.....	7,190	.....	2,450	2,180	.....

Daily discharge, in second-feet, of McKenzie River near Springfield, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2,450	4,390	11,200	4,190	5,820	23,400	4,030	4,720	3,020	2,540	2,210	1,880
2.....	2,380	5,160	13,000	4,190	6,280	22,200	4,530	4,530	3,020	2,480	2,210	1,880
3.....	2,310	7,620	7,240	4,030	5,820	16,200	4,940	4,720	2,960	2,420	2,210	1,920
4.....	2,310	4,500	6,520	4,030	4,940	13,400	4,940	4,720	2,960	2,420	2,210	1,920
5.....	2,180	3,580	6,400	3,880	4,940	12,100	5,150	4,530	2,960	2,420	2,160	1,920
6.....	2,180	3,580	6,060	3,720	4,720	11,200	5,150	4,360	2,900	2,370	2,110	1,970
7.....	2,120	3,480	5,820	3,720	4,360	9,910	4,940	4,190	3,020	2,370	2,110	1,970
8.....	2,050	3,480	6,060	3,720	4,940	7,980	4,940	4,530	3,020	2,370	2,110	1,960
9.....	2,050	3,480	6,060	3,720	4,940	7,480	4,940	4,720	3,020	2,370	2,110	1,950
10.....	1,990	4,080	6,750	3,720	6,280	7,240	4,940	6,990	3,020	2,370	2,110	1,940
11.....	1,990	4,500	11,200	3,580	6,060	7,480	4,940	6,280	3,290	2,370	2,060	1,930
12.....	1,990	4,720	11,600	3,430	6,520	7,740	4,720	6,060	3,290	2,370	2,060	1,920
13.....	1,990	4,500	13,800	3,430	6,520	7,980	4,940	4,940	3,020	2,320	2,060	1,970
14.....	1,990	3,480	13,400	3,290	6,630	7,740	4,720	4,530	3,020	2,320	2,020	1,970
15.....	1,990	3,300	11,200	3,290	6,060	7,240	4,530	4,530	3,290	2,260	2,020	1,970
16.....	1,990	2,940	10,200	3,290	5,820	7,480	4,530	4,030	2,770	2,260	2,020	1,970
17.....	1,990	4,940	7,240	3,290	4,940	7,240	4,720	3,880	2,770	2,260	2,020	1,970
18.....	1,990	12,700	6,060	3,430	6,280	6,990	4,530	3,720	2,770	2,260	2,020	1,970
19.....	2,180	19,700	5,820	4,940	6,750	6,750	4,720	3,580	2,770	2,260	2,020	1,970
20.....	2,310	19,700	5,260	4,530	6,990	6,750	4,940	3,430	2,770	2,260	2,020	1,970
21.....	2,520	11,300	5,150	4,720	6,280	6,520	5,150	3,430	2,650	2,260	2,020	1,970
22.....	2,180	33,700	4,530	6,170	6,750	4,940	4,030	3,430	3,020	2,260	2,020	1,970
23.....	2,180	35,400	4,190	8,900	6,870	4,720	3,880	3,430	2,900	2,210	1,970	1,870
24.....	2,050	25,600	4,190	7,240	7,240	3,720	3,720	3,290	2,900	2,210	1,970	1,870
25.....	2,050	16,200	4,030	7,240	9,910	4,360	4,720	3,290	2,770	2,210	1,970	1,970
26.....	2,180	11,200	4,030	6,280	9,610	3,580	4,940	3,290	2,590	2,210	1,970	1,920
27.....	2,240	9,180	4,030	6,520	9,610	3,430	4,720	3,160	2,540	2,210	1,970	1,920
28.....	2,450	10,200	4,030	6,280	15,000	3,290	4,720	3,160	2,540	2,210	1,970	1,880
29.....	2,600	10,200	4,190	6,630	-----	3,160	4,530	3,160	2,540	2,210	1,920	1,880
30.....	2,600	11,600	4,530	6,750	-----	3,430	4,530	3,160	2,540	2,210	1,920	2,020
31.....	4,390	-----	4,530	6,520	-----	3,580	-----	3,020	-----	2,210	1,920	-----

NOTE.—Daily discharge determined as follows: Sept. 12 to Oct. 6, 1905, from a well-defined curve; Oct. 7, 1905, to July 25, 1906, and Nov. 8 to Dec. 31, 1906, from a curve well defined below 6,000 second-feet; July 26 to Nov. 7, 1906, by indirect method for shifting channels; 1907, from a curve fairly well defined below 15,000 second-feet, except June 5-7 and Oct. 23-28, which was interpolated; Jan. 1, 1908, to Nov. 24, 1909, from a curve fairly well defined between 1,800 and 15,000 second-feet, except June 9-12 and Sept. 10-23, 1908, which was interpolated; Nov. 25, 1909, to Sept. 30, 1910, from a fairly well-defined curve, except Sept. 8-11, 1910, which was interpolated.

Monthly discharge of McKenzie River near Springfield, Oreg., for 1905-1910.

[Drainage area, 960 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
September 12-30.....	2,180	1,570	1,690	1.76	1.25	63,700	A.
1905-6.							
October.....	5,270	1,780	2,660	2.77	3.19	164,000	B.
November.....	4,060	1,780	2,660	2.35	2.62	134,000	A.
December.....	6,920	2,810	4,010	4.18	4.82	247,000	A.
January.....	11,800	3,620	6,200	6.46	7.45	381,000	B.
February.....	10,800	3,410	5,980	6.23	6.49	332,000	B.
March.....	7,210	3,410	4,850	5.05	5.82	298,000	B.
April.....	7,360	4,170	5,220	5.44	6.07	311,000	B.
May.....	7,820	3,950	4,900	5.10	5.88	301,000	B.
June.....	7,060	3,300	5,040	5.25	5.86	300,000	B.
July.....	3,510	2,220	2,710	2.82	3.25	167,000	B.
August.....	2,200	1,930	2,000	2.08	2.40	123,000	B.
September.....	4,180	1,780	2,140	2.23	2.49	127,000	B.
The year.....	11,800	1,780	4,000	4.17	56.34	2,880,000	

Monthly discharge of McKenzie River near Springfield, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906-7.							
October.....	5,010	1,780	2,610	2.72	3.14	160,000	B.
November.....	17,400	2,260	7,350	7.66	8.55	437,000	B.
December.....	15,600	3,200	6,650	6.93	7.99	409,000	B.
January.....	18,000	2,820	6,450	6.72	7.75	397,000	B.
February.....	37,900	6,310	12,300	12.8	13.33	683,000	B.
March.....	8,310	4,750	6,060	6.31	7.28	373,000	B.
April.....	20,500	5,440	8,420	8.77	9.78	501,000	B.
May.....	6,160	4,880	5,410	5.64	6.50	333,000	B.
June.....	5,020	3,300	4,140	4.31	4.81	246,000	B.
July.....	3,300	2,370	2,720	2.83	3.26	167,000	B.
August.....	2,700	2,180	2,290	2.39	2.76	141,000	B.
September.....	2,180	1,960	2,060	2.15	2.40	123,000	B.
The year.....	37,900	1,780	5,480	5.71	77.55	3,970,000	
1907-8.							
October.....	2,100	1,900	2,020	2.10	2.42	124,000	B.
November.....	16,700	1,830	3,980	4.15	4.63	237,000	B.
December.....	26,900	3,680	9,810	10.2	11.76	603,000	B.
January.....	8,650	4,280	6,210	6.47	7.46	382,000	B.
February.....	6,080	3,880	4,610	4.80	5.18	265,000	B.
March.....	19,200	3,580	6,280	6.54	7.54	386,000	B.
April.....	9,900	4,720	5,930	6.18	6.90	353,000	B.
May.....	6,900	4,500	5,510	5.74	6.62	339,000	B.
June.....	5,600	3,680	4,460	4.65	5.19	265,000	B.
July.....	3,680	2,450	2,860	2.98	3.44	176,000	B.
August.....	2,600	2,120	2,260	2.35	2.71	139,000	B.
September.....	2,180	1,880	2,000	2.08	2.32	119,000	B.
The year.....	26,900	1,830	4,660	4.86	66.17	3,390,000	
1908-9.							
October.....	6,620	1,820	2,850	2.97	3.42	175,000	B.
November.....	7,480	2,120	3,440	3.58	3.99	205,000	B.
December.....	8,350	2,450	3,540	3.69	4.25	218,000	B.
January.....	23,300	4,080	9,620	10.0	11.53	592,000	B.
February.....	13,500	4,390	6,750	7.03	7.32	375,000	B.
March.....	8,650	4,080	5,400	5.62	6.48	332,000	B.
April.....	5,380	3,680	4,200	4.38	4.89	250,000	B.
May.....	7,190	3,480	4,550	4.74	5.46	280,000	B.
June.....	7,190	2,940	4,170	4.34	4.84	248,000	B.
July.....	4,280	2,450	2,820	2.94	3.39	173,000	C.
August.....	2,770	2,180	2,380	2.48	2.86	146,000	C.
September.....	2,450	1,990	2,070	2.16	2.41	123,000	C.
The year.....	23,300	1,820	4,320	4.50	60.84	3,120,000	
1909-10.							
October.....	4,390	1,990	2,250	2.34	2.70	138,000	C.
November.....	35,400	2,940	9,950	10.4	11.60	592,000	C.
December.....	13,800	4,030	7,040	7.34	8.46	433,000	B.
January.....	8,900	3,290	4,800	5.00	5.76	285,000	B.
February.....	15,000	4,360	6,670	6.95	7.24	370,000	B.
March.....	23,400	3,160	8,040	8.38	9.66	494,000	B.
April.....	5,150	3,720	4,690	4.89	5.46	279,000	B.
May.....	6,990	3,020	4,160	4.33	4.99	256,000	B.
June.....	3,290	2,540	2,890	3.01	3.36	172,000	B.
July.....	2,540	2,210	2,310	2.41	2.78	142,000	B.
August.....	2,210	1,920	2,050	2.14	2.47	126,000	B.
September.....	2,020	1,880	1,950	2.03	2.26	116,000	B.
The year.....	35,400	1,880	4,730	4.93	66.74	3,410,000	

NORTH FORK OF SANTIAM RIVER NEAR HOOVER, OREG.

Location.—In sec. 16, T. 10 S., R. 6 E., 1 mile above Boulder Creek, 2½ miles above Hoover, and 4½ miles above Detroit.

Records presented.—August 26 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff on right bank.

Channel.—Gravel and small bowlders; slightly shifting.

Discharge measurements.—Made from cable half a mile below Boulder Creek, the discharge of which is deducted to give the flow at the gage.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by H. M. Byllesby & Co., of Portland, Oreg.

Discharge measurements of North Fork of Santiam River near Hoover, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Discharge.
Aug. 19	J. H. Cave.....	<i>Feet.</i> 1.50	<i>Sec.-ft.</i> 438
Sept. 7	.....do.....	1.40	432

Daily gage height, in feet, of North Fork of Santiam River near Hoover, Oreg., for 1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1.....		1.45	11.....		1.40	21.....		1.40
2.....		1.45	12.....		1.40	22.....		1.40
3.....		1.45	13.....		1.40	23.....		
4.....		1.45	14.....		1.40	24.....		
5.....		1.45	15.....		1.40	25.....		
6.....		1.40	16.....		1.40	26.....	1.45	
7.....		1.40	17.....		1.40	27.....	1.45	
8.....		1.40	18.....		1.40	28.....	1.48	
9.....		1.40	19.....		1.40	29.....	1.50	1.40
10.....		1.40	20.....		1.64	30.....	1.45	1.32
						31.....	1.45	

NORTH FORK OF SANTIAM RIVER AT DETROIT, OREG.

Location.—In sec. 7, T. 10 S., R. 6 E., 1 mile above Detroit and 2 miles below mouth of Boulder Creek.

Records presented.—January 24, 1907, to October 31, 1909, and discharge measurements made in later years.

Drainage area.—256 square miles.

Gage.—Vertical staff in two sections.

Channel.—Rock and gravel; shifts somewhat.

Discharge measurements.—Made from footbridge.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Discharge measurements of North Fork of Santiam River at Detroit, Oreg., in 1906-1910.

Date.	Hydrographer.	Gage height.	Discharge.
1906. Sept. 5	J. C. Stevens.....	<i>Feet.</i> 1.21	<i>Sec.-ft.</i> 433
1907. Jan. 24	J. C. Stevens.....	1.80	742
Mar. 26	I. E. Oakes.....	2.35	918
July 24	H. D. McGlashan.....	1.48	512
1910. Oct. 5	F. C. Ebert.....	1.60	650

Daily gage height, in feet, of North Fork of Santiam River at Detroit, Oreg., for 1907-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1.					5.2	2.9	2.3	2.75	2.5	1.7	1.4	1.3
2.					4.5	2.9	2.3	2.7	2.5	1.75	1.4	1.3
3.					5.85	2.75	2.3	2.75	2.45	2.05	1.4	1.3
4.					9.2	2.8	2.35	2.75	2.3	1.85	1.4	1.3
5.					12.1	2.7	2.45	2.8	2.25	1.75	1.4	1.35
6.					9.05	2.6	2.75	2.9	2.2	1.7	1.4	1.3
7.					6.5	2.6	4.95	3.0	2.1	1.7	1.4	1.3
8.					5.6	2.5	4.95	3.0	2.0	1.7	1.5	1.2
9.					5.15	2.5	4.6	2.9	2.0	1.7	1.4	1.25
10.					5.0	2.5	4.8	3.25	2.15	1.65	1.4	1.3
11.					4.9	2.5	4.35	3.15	2.4	1.6	1.35	1.3
12.					4.35	2.5	4.15	2.95	2.25	1.6	1.3	1.3
13.					4.1	2.5	4.1	2.85	2.2	1.6	1.3	1.3
14.					3.95	2.35	4.0	2.8	2.1	1.6	1.3	1.25
15.					3.9	2.2	3.85	2.9	2.1	1.6	1.3	1.2
16.					3.9	2.1	3.7	3.0	2.0	1.35	1.4	1.4
17.					3.7	2.2	3.5	2.95	2.0	1.3	1.35	1.55
18.					3.55	2.15	3.85	2.9	2.0	1.3	1.4	1.4
19.					3.5	2.25	4.05	3.1	2.0	1.5	1.3	1.3
20.					3.3	2.3	3.8	3.05	2.0	1.5	1.3	1.3
21.					3.2	2.55	3.7	2.8	2.0	1.5	1.2	1.3
22.					3.2	2.25	3.65	2.7	2.05	1.5	1.3	1.2
23.					3.2	2.1	3.55	2.8	2.05	1.5	1.3	1.2
24.					3.2	2.5	3.4	2.75	1.95	1.5	1.65	1.2
25.				1.8	3.55	2.45	3.25	2.55	1.9	1.5	1.55	1.2
26.				1.8	3.4	2.35	3.15	2.5	1.95	1.5	1.35	1.2
27.				1.9	3.2	2.3	3.0	2.5	1.9	1.45	1.3	1.25
28.				2.6	3.0	2.2	2.95	2.5	1.9	1.4	1.3	1.3
29.				3.6		2.2	2.85	2.5	1.8	1.4	1.3	1.25
30.				3.2		2.2	2.75	2.5	1.75	1.4	1.3	1.25
31.				5.35		2.3		2.6		1.4	1.3	
1907-8.												
1.	1.35	1.35	2.5	3.0	1.9	2.1	2.4	3.2	2.6	2.4	1.55	1.35
2.	1.35	1.35	2.3	2.95	1.85	2.0	2.4	3.3	2.6	2.4	1.5	1.3
3.	1.3	1.25	2.2	3.05	1.9	1.9	2.5	3.3	2.6	2.45	1.5	1.3
4.	1.3	1.2	2.2	2.65	2.1	1.9	2.5	3.1	2.5	2.35	1.5	1.3
5.	1.3	1.2	2.2	2.65	2.4	1.8	2.4	3.1	2.5	2.2	1.45	1.3
6.	1.25	1.15	2.1	2.55	2.3	1.75	2.3	3.2	2.5	2.2	1.4	1.3
7.	1.2	1.1	2.45	2.6	2.2	1.7	2.3	3.65	2.5	2.2	1.4	1.3
8.	1.2	1.1	2.5	2.6	2.1	1.7	2.2	3.3	2.75	2.1	1.4	1.3
9.	1.2	1.1	2.6	3.05	2.1	1.7	2.2	3.0	3.1	2.1	1.4	1.3
10.	1.2	1.1	2.6	2.95	2.0	1.7	2.25	2.9	3.05	2.05	1.4	1.3
11.	1.2	1.1	2.8	2.9	2.1	1.75	2.45	2.8	3.0	2.0	1.4	1.3
12.	1.2	1.1	3.2	2.8	2.0	1.9	2.7	2.8	3.0	2.1	1.4	1.3
13.	1.2	1.1	4.65	2.7	1.9	2.15	2.9	2.6	2.9	2.1	1.4	1.25
14.	1.2	1.3	3.85	2.7	1.9	2.9	3.0	2.5	2.9	2.05	1.4	1.2
15.	1.2	1.2	3.4	2.6	1.9	8.7	3.1	2.7	2.9	2.0	1.4	1.2
16.	1.2	1.2	2.9	2.5	1.95	8.05	3.15	2.7	2.9	1.95	1.4	1.2
17.	1.2	1.2	2.65	2.5	2.0	6.75	3.7	2.7	2.7	1.75	1.4	1.2
18.	1.2	1.1	2.6	2.5	1.9	4.95	4.5	3.05	2.6	1.7	1.4	1.2
19.	1.2	1.35	2.5	2.7	1.9	4.5	4.5	3.1	2.6	1.7	1.4	1.2
20.	1.2	1.7	2.55	3.3	1.9	4.0	4.35	3.1	2.6	1.7	1.4	1.2
21.	1.2	1.55	6.5	3.05	1.8	3.45	4.05	3.0	2.6	1.7	1.4	1.15
22.	1.2	2.1	8.35	2.85	1.8	3.3	3.7	3.0	2.5	1.7	1.4	1.1
23.	1.1	2.0	7.4	2.7	1.7	3.2	3.75	3.0	2.4	1.7	1.4	1.1
24.	1.1	4.55	6.85	2.5	1.7	3.25	4.65	2.9	2.4	1.7	1.3	1.1
25.	1.1	4.4	8.35	2.4	1.7	3.2	3.95	2.8	2.4	1.7	1.3	1.1
26.	1.1	4.0	6.4	2.3	1.8	3.2	3.7	2.9	2.5	1.6	1.3	1.1
27.	1.1	3.05	5.15	2.2	2.1	2.8	3.6	2.9	2.4	1.6	1.3	1.1
28.	1.1	2.8	4.35	2.2	2.1	2.7	3.4	2.9	2.3	1.6	1.4	1.1
29.	1.4	2.8	3.8	2.05	2.1	2.6	3.3	2.8	2.3	1.6	1.5	1.1
30.	1.35	2.6	3.4	2.05		2.6	3.3	2.75	2.4	1.6	1.5	1.1
31.	1.3		3.2	1.9		2.5		2.7		1.6	1.4	

Daily gage height, in feet, of North Fork of Santiam River at Detroit, Oreg., for 1907-1909—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	1.1	2.65	1.8	2.8	2.5	2.8	2.6	2.8	3.9	1.7	1.5	0.6
2.....	1.1	2.2	1.8	1.95	2.5	2.7	2.7	2.95	4.05	1.7	1.4	.6
3.....	1.15	1.9	1.8	3.15	2.4	2.7	2.85	3.6	3.8	1.6	1.3	.6
4.....	1.1	1.8	1.7	3.35	2.4	2.7	2.85	3.95	3.65	1.65	1.3	.6
5.....	1.05	1.65	1.6	3.3	2.4	2.7	2.8	3.6	3.50	1.9	1.3	.6
6.....	1.0	1.5	1.6	3.2	2.3	2.6	2.8	3.0	3.05	2.1	1.3	.5
7.....	1.0	1.5	1.6	3.3	2.3	2.6	2.65	3.0	2.9	2.0	1.3	.5
8.....	1.0	1.5	1.6	3.2	2.2	2.5	2.6	3.0	2.8	2.15	1.2	.5
9.....	1.0	1.5	1.6	3.1	2.2	2.5	2.5	2.9	2.75	2.3	1.2	.6
10.....	1.0	1.5	1.5	2.8	2.1	2.4	2.5	2.7	2.7	2.1	1.2	.6
11.....	1.0	1.45	1.65	2.25	2.1	2.4	2.5	2.7	2.7	2.0	1.1	.6
12.....	1.05	1.4	1.65	2.2	2.3	2.3	2.5	2.8	2.6	1.9	1.0	.55
13.....	1.4	1.4	1.7	2.2	2.4	2.2	2.5	2.95	2.6	1.8	1.0	.4
14.....	2.6	1.3	1.7	2.35	2.4	2.2	2.5	2.9	2.55	1.8	1.0	.5
15.....	2.2	1.3	1.7	2.85	2.4	2.3	2.4	2.85	2.5	1.7	1.0	.65
16.....	1.8	1.3	1.7	5.25	3.7	2.5	2.45	2.8	2.55	1.6	1.0	.8
17.....	1.6	1.35	1.7	4.8	4.65	2.5	2.5	2.7	2.5	1.6	1.0	.9
18.....	1.4	2.0	1.6	5.8	4.9	2.5	2.4	2.65	2.4	1.5	1.0	.9
19.....	1.5	1.85	1.5	7.2	4.8	2.6	2.4	2.6	2.4	1.5	1.0	.9
20.....	1.65	2.95	1.4	8.0	4.35	2.35	2.4	2.6	2.35	1.5	1.0	1.0
21.....	1.5	2.9	1.55	7.4	3.5	2.3	2.4	2.6	2.2	1.5	1.0	1.0
22.....	1.5	3.5	1.65	6.05	3.4	2.3	2.4	2.5	2.2	1.45	1.0	1.2
23.....	1.5	3.2	1.7	5.0	3.15	2.3	2.4	2.4	2.1	1.4	1.0	1.0
24.....	1.5	2.9	1.75	4.85	3.0	2.25	2.45	2.45	2.1	1.4	1.0	.9
25.....	1.5	2.5	1.95	4.25	2.9	2.3	2.5	2.65	2.0	1.5	.9	.8
26.....	1.5	2.35	2.1	3.5	2.9	2.4	2.9	2.9	2.0	1.5	.9	.65
27.....	1.5	2.2	2.6	3.0	2.8	2.5	3.6	3.35	2.0	1.6	.8	.6
28.....	1.5	2.1	3.0	2.9	2.8	2.5	3.6	3.35	2.0	1.5	.8	.7
29.....	1.6	2.0	2.8	2.8	.....	2.6	3.35	3.4	1.9	1.5	.7	.7
30.....	2.8	1.9	2.6	2.6	.....	2.6	2.85	3.65	1.8	1.5	.7	.8
31.....	2.95	.....	2.4	2.5	.....	2.5	.....	3.7	.....	1.5	.6	.....

Day.	Oct.	Day.	Oct.	Day.	Oct.
1909.					
1.....	0.8	11.....	1.0	21.....	1.1
2.....	.7	12.....	1.0	22.....	1.1
3.....	.6	13.....	.9	23.....	1.1
4.....	.5	14.....	.9	24.....	1.1
5.....	.5	15.....	.9	25.....	1.0
6.....	.6	16.....	.9	26.....	1.0
7.....	.7	17.....	.9	27.....	1.05
8.....	.8	18.....	.9	28.....	1.15
9.....	.9	19.....	1.0	29.....	1.3
10.....	1.0	20.....	1.1	30.....	1.65
				31.....	2.05

NOTE.—Gage heights for August to October, 1909, probably not reliable, as lower end of gage was buried in sand and gravel, and observer merely estimated the readings.

Daily discharge, in second-feet, of North Fork of Santiam River at Detroit, Oreg., for 1907-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1					2,640	1,110	830	1,040	920	595	490	460
2					2,090	1,110	830	1,010	920	612	490	460
3					3,170	1,040	830	1,040	898	730	490	460
4					6,320	1,060	852	1,040	830	650	460	460
5					9,220	1,010	898	1,060	810	612	490	475
6					6,170	965	1,040	1,110	790	595	490	460
7					3,740	965	2,440	1,160	750	595	490	460
8					2,960	920	2,440	1,160	710	595	525	430
9					2,600	920	2,160	1,110	710	595	490	445
10					2,480	920	2,320	1,300	770	578	490	460
11				2,400	920	1,980	1,240	875	560	475	460	460
12				1,980	920	1,850	1,140	810	560	460	460	460
13				1,820	920	1,820	1,080	790	560	460	460	460
14				1,720	852	1,750	1,060	750	560	460	445	460
15				1,680	790	1,650	1,110	750	560	460	460	430
16				1,680	750	1,560	1,160	710	552	475	490	460
17				1,560	790	1,440	1,140	710	543	460	542	460
18				1,470	770	1,650	1,110	710	534	460	490	460
19				1,440	810	1,780	1,220	710	525	460	460	460
20				1,320	830	1,620	1,190	710	525	460	460	460
21				1,270	942	1,560	1,060	710	525	430	460	460
22				1,270	810	1,530	1,010	730	525	460	430	460
23				1,270	750	1,470	1,060	730	525	460	430	460
24				630	1,270	920	1,380	1,040	690	525	578	430
25				630	1,470	898	1,300	942	670	525	542	430
26				630	1,380	852	1,240	920	690	525	475	430
27				670	1,270	830	1,160	920	670	508	460	445
28				965	1,160	790	1,140	920	670	490	460	460
29				1,500	790	1,080	920	630	490	460	445	460
30				1,270	790	1,040	920	612	490	460	445	460
31				2,760	830	965	965	490	460	460	460	460
1907-8.												
1	475	445	920	1,160	670	750	875	1,270	965	875	542	475
2	475	475	830	1,140	650	710	875	1,320	965	875	525	460
3	460	445	790	1,190	670	670	920	1,320	965	898	525	460
4	460	430	790	988	750	670	920	1,220	920	852	525	460
5	460	430	790	988	875	630	875	1,220	920	790	508	460
6	445	415	750	942	830	612	830	1,270	920	790	490	460
7	430	400	898	965	790	595	830	1,530	920	790	490	460
8	430	400	920	965	750	595	790	1,320	1,040	750	490	460
9	430	400	965	1,190	750	595	790	1,160	1,220	750	490	460
10	430	400	965	1,140	710	595	810	1,110	1,190	730	490	460
11	430	400	1,060	1,110	750	612	898	1,060	1,160	710	490	460
12	430	400	1,270	1,060	710	670	1,010	1,000	1,160	750	490	460
13	430	400	2,200	1,010	670	770	1,110	965	1,110	750	490	445
14	430	460	1,650	1,010	670	1,110	1,160	920	1,110	730	490	430
15	430	430	1,380	965	670	5,820	1,220	1,010	1,110	710	490	430
16	430	430	1,110	920	690	5,200	1,240	1,010	1,110	690	490	430
17	430	430	988	920	710	3,970	1,560	1,010	1,010	612	490	430
18	430	400	965	920	670	2,440	2,090	1,190	965	595	490	430
19	430	475	920	1,010	670	2,090	2,090	1,220	965	595	490	430
20	430	595	942	1,320	670	1,750	1,980	1,220	965	595	490	430
21	430	542	3,740	1,190	630	1,410	1,780	1,160	965	595	490	415
22	430	750	5,480	1,080	630	1,320	1,560	1,160	920	595	490	400
23	400	710	4,580	1,010	595	1,270	1,590	1,160	875	595	490	400
24	400	2,130	4,060	920	595	1,300	2,200	1,110	875	595	460	400
25	400	2,020	5,480	875	595	1,270	1,720	1,060	875	595	460	400
26	400	1,750	3,660	830	630	1,270	1,560	1,110	920	560	460	400
27	400	1,190	2,600	790	750	1,060	1,500	1,110	875	560	460	400
28	400	1,060	1,980	790	750	1,010	1,380	1,110	830	560	490	400
29	490	1,060	1,620	730	750	965	1,320	1,060	830	560	525	400
30	475	965	1,380	730	730	965	1,320	1,040	875	560	525	400
31	460	1,270	670	670	670	920	1,010	1,010	560	490	460	460

Daily discharge, in second-feet, of North Fork of Santiam River at Detroit, Oreg., for 1907-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	400	988	630	1,060	920	1,060	965	1,060	1,680	595	-----	-----
2.....	400	790	630	1,140	920	1,010	1,010	1,140	1,780	595	-----	-----
3.....	415	670	630	1,240	875	1,010	1,080	1,500	1,620	560	-----	-----
4.....	400	630	595	1,350	875	1,010	1,080	1,720	1,530	578	-----	-----
5.....	388	578	560	1,320	875	1,010	1,060	1,500	1,440	670	-----	-----
6.....	375	525	560	1,270	830	965	1,060	1,160	1,190	750	-----	-----
7.....	375	525	560	1,320	830	965	988	1,160	1,110	710	-----	-----
8.....	375	525	560	1,270	790	920	965	1,160	1,060	770	-----	-----
9.....	375	525	560	1,220	790	920	920	1,110	1,040	830	-----	-----
10.....	375	525	525	1,060	750	875	920	1,010	1,010	750	-----	-----
11.....	375	508	578	810	750	875	920	1,010	1,010	710	-----	-----
12.....	388	490	578	790	830	830	920	1,060	965	670	-----	-----
13.....	490	490	595	790	875	790	920	1,140	965	630	-----	-----
14.....	965	460	595	852	875	790	920	1,110	942	630	-----	-----
15.....	790	460	595	1,650	875	830	875	1,080	920	595	-----	-----
16.....	630	460	595	2,680	1,560	920	898	1,060	942	560	-----	-----
17.....	560	475	595	2,320	2,200	920	920	1,010	920	560	-----	-----
18.....	490	710	560	3,130	2,400	920	875	988	875	525	-----	-----
19.....	525	650	525	4,390	2,320	965	875	965	875	525	-----	-----
20.....	578	1,140	490	5,150	1,980	852	875	965	852	525	-----	-----
21.....	525	1,110	542	4,580	1,440	830	875	965	790	525	-----	-----
22.....	525	1,440	578	3,340	1,380	830	875	920	790	508	-----	-----
23.....	525	1,270	595	2,480	1,240	830	875	875	750	490	-----	-----
24.....	525	1,110	612	2,360	1,160	810	898	898	750	490	-----	-----
25.....	525	920	690	1,920	1,110	830	920	988	710	525	-----	-----
26.....	525	852	750	1,440	1,110	875	1,110	1,110	710	525	-----	-----
27.....	525	790	965	1,160	1,060	920	1,500	1,350	710	560	-----	-----
28.....	525	750	1,160	1,110	1,060	920	1,500	1,350	710	525	-----	-----
29.....	560	710	1,060	1,060	-----	965	1,350	1,380	670	525	-----	-----
30.....	1,060	670	965	965	-----	965	1,080	1,530	630	525	-----	-----
31.....	1,140	-----	875	920	-----	920	-----	1,560	-----	525	-----	-----

NOTE.—Daily discharge determined from a fairly well defined rating curve.

Monthly discharge of North Fork of Santiam River at Detroit, Oreg., for 1907-1909.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
January 24-31.....	2,760	630	1,130	17,900	B.
February.....	9,220	1,160	2,460	137,000	B.
March.....	1,110	750	889	54,700	B.
April.....	2,440	830	1,490	88,700	B.
May.....	1,300	920	1,070	65,800	B.
June.....	920	612	748	44,500	B.
July.....	730	490	557	34,200	A.
August.....	578	430	478	29,400	A.
September.....	542	430	456	27,100	A.
The period.....	-----	-----	-----	499,000	-----
1907-8.					
October.....	490	400	435	26,700	A.
November.....	2,130	400	695	41,400	B.
December.....	5,480	750	1,840	113,000	B.
January.....	1,320	670	985	60,600	B.
February.....	875	595	698	40,100	B.
March.....	5,820	595	1,410	86,700	B.
April.....	2,200	790	1,290	76,800	B.
May.....	1,530	920	1,140	70,100	B.
June.....	1,220	830	984	58,600	B.
July.....	898	560	683	42,000	B.
August.....	542	460	494	30,400	B.
September.....	475	400	434	25,800	B.
The year.....	5,820	400	924	672,000	-----

Monthly discharge of North Fork of Santiam River at Detroit, Oreg., for 1907-1909—
Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
October.....	1,140	375	536	33,000	B.
November.....	1,440	460	725	43,100	B.
December.....	1,160	490	655	40,300	B.
January.....	5,150	790	1,810	111,000	B.
February.....	2,400	750	1,170	65,000	B.
March.....	1,060	790	907	55,500	B.
April.....	1,500	875	1,000	59,500	B.
May.....	1,720	875	1,160	71,300	B.
June.....	1,780	630	998	59,400	B.
July.....	830	490	506	36,600	B.
The period.....				575,000	

NORTH FORK OF SANTIAM RIVER NEAR NIAGARA, OREG.

Location.—In sec. 29, T. 9 S., R. 4 E., 1 mile below Niagara and about 15 miles below Breitenbush River.

Records presented.—December 20, 1908, to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Large bowlders; practically permanent.

Discharge measurements.—Made from boat near gage.

Cooperation.—Records furnished by O'Neil Bros. & Callahan, owners of the power site at the station.

Estimates of discharge withheld for additional data.

Discharge measurements of North Fork of Santiam River near Niagara, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 15	W. Meredith.....	1.73	751	June 5	J. H. Cave.....	2.30	1,390
				June 9	.....do.....	2.00	1,230
1910.				Aug. 17	.....do.....	1.40	722
June 4	J. H. Cave.....	2.10	1,260				

Daily gage height, in feet, of North Fork of Santiam River near Niagara, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1				3.0	3.0	4.6	4.0	3.6	4.8	3.2	2.0	1.6
2				2.9	3.0	4.1	3.8	3.5	4.6	3.1	2.0	1.6
3				3.5	3.2	4.0	3.6	4.1	4.5	3.0	1.9	1.6
4				4.9	3.1	3.8	3.5	4.6	4.2	2.9	1.9	1.6
5		3.5		4.6	3.1	3.6	3.4	3.9	4.1	2.8	1.9	1.6
6				4.0	3.1	3.4	3.2	3.6	4.0	2.7	1.8	1.6
7				4.0	3.2	3.3	3.1	3.7	3.9	2.7	1.8	1.6
8				4.0	3.2	3.0	3.0	3.3	3.6	2.6	1.8	1.6
9				3.6	2.7	2.9	3.2	3.3	3.2	2.4	1.8	1.6
10				3.3	2.5	2.9	3.3	3.0	3.1	3.4	1.8	1.6
11				3.0	2.6	2.8	3.4	3.2	3.2	3.0	1.8	1.7
12				2.9	2.8	3.0	3.1	4.6	3.3	2.6	1.8	1.5
13				2.8	3.0	3.0	3.0	4.2	3.1	2.5	1.8	1.5
14				2.7	3.0	3.0	3.0	3.8	3.2	2.5	1.7	1.5
15				2.8	4.0	3.1	3.1	3.1	3.3	2.4	1.7	1.5
16				7.0	5.3	3.4	3.2	3.0	3.4	2.3	1.7	1.4
17				6.2	7.0	3.5	3.3	3.2	3.3	2.2	1.7	1.4
18				7.5	6.5	3.5	3.2	3.3	3.0	2.1	1.7	1.4
19				8.7	6.4	3.3	3.1	3.1	3.1	2.2	1.7	1.5
20			2.1	10.0	5.5	3.4	3.0	3.0	3.2	2.1	1.7	1.6
21			2.1	8.8	4.7	3.1	2.9	2.9	3.3	2.1	1.7	1.7
22			2.3	7.2	4.2	3.0	2.8	3.0	3.3	2.0	1.7	1.6
23			2.8	8.5	4.0	2.9	2.8	3.2	3.0	2.0	1.7	1.6
24			2.8	5.0	3.9	2.8	2.9	3.4	2.9	2.0	1.7	1.6
25			2.6	4.6	3.4	2.8	2.9	3.5	2.6	2.1	1.7	1.6
26			3.1	4.0	3.0	3.1	3.0	3.6	2.5	2.2	1.7	1.6
27			3.3	3.7	3.5	3.2	3.9	3.8	2.9	2.3	1.7	1.6
28			4.2	3.5	3.6	3.3	3.8	3.8	3.0	2.1	1.7	1.6
29			4.2	3.2		3.4	3.7	3.9	3.1	2.1	1.6	1.8
30			3.6	3.1		3.6	3.6	4.0	3.3	2.0	1.6	2.0
31			3.3	3.0		3.4		4.6		2.0	1.6	
1909-10.												
1	1.8	3.2	5.2	3.3	3.4	9.0	3.1	3.0	2.5	1.9	1.5	1.3
2	1.7	6.0	4.8	2.6	3.3	10.0	3.3	3.0	2.3	1.8	1.5	1.3
3	1.6	5.0	4.6	2.5	3.2	8.3	3.5	2.9	2.2	1.8	1.5	1.3
4	1.6	4.0	3.8	2.4	2.9	7.0	3.4	3.0	2.1	1.8	1.5	1.3
5	1.6	3.4	3.5	2.4	2.8	5.0	3.4	3.1	2.3	1.8	1.5	1.3
6	1.6	3.0	3.3	2.4	2.8	4.6	3.5	3.2	2.2	1.8	1.5	1.3
7	1.6	2.8	3.0	2.5	2.9	4.5	3.4	3.2	2.1	1.8	1.5	1.3
8	1.6	3.0	3.6	2.3	2.8	4.4	3.5	3.3	2.1	1.8	1.5	1.3
9	1.6	3.3	4.0	2.3	2.6	4.4	3.6	3.4	2.0	1.8	1.5	1.3
10	1.6	3.5	3.6	2.2	2.8	4.2	3.1	3.6	2.0	1.8	1.5	1.3
11	1.6	3.2	3.5	2.2	2.9	4.0	3.8	4.6	2.3	1.8	1.5	1.3
12	1.6	3.0	6.5	2.2	3.0	4.0	3.8	3.9	2.2	1.8	1.5	1.3
13	1.6	2.9	6.5	2.1	3.0	4.3	3.7	3.8	2.1	1.7	1.4	1.3
14	1.5	2.7	5.2	2.1	3.3	4.5	3.6	3.0		1.7	1.4	1.3
15	1.5	2.6	5.1	2.1	3.4	5.0	3.3	3.3		1.7	1.4	1.3
16	1.5	2.5	4.6	2.0	3.1	5.4	3.3	3.1		1.7	1.4	1.3
17	1.5	4.4	3.8	2.2	3.0	5.4	3.3	3.0		1.7	1.4	1.3
18	1.5	6.4	3.6	2.1	3.4	4.0	3.6	2.9	2.0	1.7	1.4	1.3
19	1.5	7.4	3.4	2.4	3.5	4.4	4.0	2.8	2.0	1.7	1.4	1.3
20	1.8	10.4	3.3	2.6	3.6	4.1	4.1	2.6	2.0	1.7	1.4	1.4
21	2.2	10.4	3.3	3.0	3.4	4.3	3.9	2.5	2.1	1.7	1.4	1.5
22	2.3	14.6	3.3	4.0	3.2	4.5	3.8	2.4	2.1	1.6	1.4	1.4
23	2.1	14.0	3.3	5.7	3.0	4.7	4.0	2.4	2.1	1.6	1.4	1.4
24	1.8	11.6	3.2	6.1	3.0	4.2	4.1	2.2	2.0	1.6	1.4	1.4
25	1.7	7.6	3.2	5.1	3.8	3.9	4.2	2.3	2.0	1.6	1.4	1.4
26	1.7	6.0	3.2	4.2	5.5	3.8	4.0	2.4	2.0	1.6	1.4	1.4
27	1.7	6.0	3.1	4.6	4.7	3.4	3.6	2.6	2.0	1.6	1.4	1.3
28	1.7	5.6	2.1	4.4	4.8	3.3	3.3	2.5	1.9	1.6	1.4	1.3
29	2.1	5.5	2.2	4.2		3.2	3.1	2.4	1.9	1.6	1.3	1.3
30	2.0	5.4	2.5	3.3		3.1	3.1	2.5	1.9	1.5	1.3	1.3
31	2.4		3.0	3.5		3.0		2.5		1.5	1.3	

NORTH FORK OF SANTIAM RIVER AT MEHAMA, OREG.

Location.—In sec. 18, T. 9 S., R. 2 E., just below the highway bridge at Mehama, about 1½ miles north of Lyons and about half a mile below the junction of Little North Fork and North Fork.

Records presented.—July 11, 1905, to March 31, 1907.

Drainage area.—740 square miles.

Gage.—Staff in two sections on right bank; lower section inclined; upper, vertical.

Channel.—Rocks and coarse gravel; shifts in floods.

Discharge measurements.—Made from highway bridge 150 feet above gage.

Accuracy.—Results good.

Discharge measurements of North Fork of Santiam River at Mehama, Oreg., in 1905–1907.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 11	L. R. Allen.....	2.90	1,050	May 7	L. R. Allen.....	4.28	2,800
Oct. 18 ^a	.....do.....	4.44	3,560	May 15 ^b	.....do.....	4.65	3,060
Nov. 16	J. H. Lewis.....	2.90	973	July 17	.....do.....	3.04	1,080
Dec. 12	L. R. Allen.....	4.24	2,880	Aug. 21	.....do.....	2.64	756
1906.				Sept. 27	I. E. Oakes.....	2.83	905
Jan. 4 ^a	L. R. Allen.....	4.20	2,230	1907.			
Feb. 7	.....do.....	4.51	3,320	Feb. 6	I. E. Oakes.....	11.00	29,100
Mar. 26	.....do.....	4.20	2,740	Mar. 27	.....do.....	4.15	3,170

^a Measurement unreliable.

^b Backwater from log jam.

Daily gage height, in feet, of North Fork of Santiam River at Mehama, Oreg., for 1905–1907.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1905.				1905.				1905.			
1.....		2.65	2.5	11.....		2.6	2.45	21.....	2.75	2.55	2.55
2.....		2.65	2.5	12.....		2.9	2.6	22.....	2.75	2.55	2.55
3.....		2.65	2.5	13.....		2.9	2.6	23.....	2.75	2.55	2.5
4.....		2.65	2.5	14.....		2.85	2.6	24.....	2.7	2.55	2.5
5.....		2.65	2.5	15.....		2.8	2.6	25.....	2.7	2.5	4.35
6.....		2.65	2.5	16.....		2.8	2.5	26.....	2.7	2.5	4.35
7.....		2.65	2.5	17.....		2.8	2.6	27.....	2.7	2.5	3.25
8.....		2.65	2.45	18.....		2.8	2.6	28.....	2.7	2.55	3.35
9.....		2.6	2.45	19.....		2.75	2.6	29.....	2.7	2.55	3.35
10.....		2.6	2.45	20.....		2.75	2.55	30.....	2.65	2.55	3.5
								31.....	2.65	2.5	.....

Daily gage height, in feet, of North Fork of Santiam River at Mehama, Oreg., for 1905-1907—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	
1905-6.													
1.....	3.35	3.55	4.3	4.35	5.8	5.5	5.45	5.0	4.3	3.8	2.8	2.6	
2.....	3.55	3.4	5.0	4.2	5.9	5.3	5.0	4.6	4.1	3.8	2.8	2.55	
3.....	3.4	3.4	5.3	4.1	5.5	5.2	4.7	4.6	4.2	3.7	2.8	2.55	
4.....	6.8	3.4	5.1	4.2	5.2	5.15	4.55	4.6	4.8	3.65	2.75	2.55	
5.....	5.1	3.4	5.0	4.4	5.0	5.0	4.55	4.6	4.5	3.6	2.75	2.55	
6.....	5.35	3.25	5.1	4.5	4.75	5.25	4.8	4.3	5.0	3.5	2.75	2.55	
7.....	6.6	3.2	5.5	4.5	4.6	5.4	5.0	4.3	5.4	3.4	2.75	2.55	
8.....	5.9	3.15	5.6	4.6	4.4	5.6	5.0	4.3	5.1	3.35	2.75	2.55	
9.....	5.2	3.1	5.0	5.1	4.25	5.5	5.3	4.5	5.1	3.3	2.75	2.65	
10.....	4.7	3.1	4.7	4.85	4.15	5.65	5.0	4.6	5.1	3.25	2.7	2.65	
11.....	4.3	3.1	4.4	5.5	4.05	5.2	5.0	5.0	4.7	3.25	2.7	2.6	
12.....	4.1	3.0	4.3	5.0	4.0	4.9	5.0	4.45	4.8	3.2	2.7	2.7	
13.....	3.9	3.0	4.15	5.3	3.9	4.7	4.85	4.25	4.7	3.2	2.7	3.15	
14.....	3.7	2.95	4.1	5.0	3.9	4.4	4.8	4.4	4.4	3.2	2.7	4.1	
15.....	4.9	2.9	4.1	4.7	4.2	4.2	4.5	5.0	4.5	3.15	2.7	4.2	
16.....	4.6	2.9	4.1	5.3	4.3	4.1	4.6	4.2	5.4	3.1	2.7	3.1	
17.....	4.4	2.9	5.75	5.3	4.9	3.9	4.6	4.05	5.0	3.1	2.7	3.05	
18.....	4.45	3.35	5.4	5.15	6.2	3.95	4.3	4.05	4.75	3.0	2.7	2.9	
19.....	4.15	4.8	5.4	4.8	7.7	3.9	4.3	4.25	4.5	3.0	2.65	2.9	
20.....	3.95	4.6	5.05	4.5	8.1	3.8	4.3	4.2	4.35	3.0	2.65	2.8	
21.....	3.8	4.0	4.75	4.35	7.85	3.8	4.9	4.5	4.2	2.95	2.65	2.75	
22.....	3.7	3.8	4.45	4.5	7.05	3.8	4.7	4.5	4.2	2.95	2.65	2.7	
23.....	3.6	3.7	4.3	6.3	6.85	3.7	4.6	4.5	3.9	2.95	2.6	2.7	
24.....	3.65	3.55	4.1	8.55	6.4	3.95	4.5	4.3	3.9	2.9	2.6	2.95	
25.....	5.1	3.5	4.0	6.8	6.05	3.05	5.2	4.2	3.8	2.9	2.6	3.15	
26.....	5.2	4.4	5.9	6.25	6.4	4.2	5.2	4.3	3.75	2.85	2.6	2.9	
27.....	4.6	4.2	5.25	5.85	6.6	4.3	4.95	4.2	3.65	2.85	2.6	2.8	
28.....	4.25	4.0	4.9	5.5	5.95	4.25	5.2	4.1	3.65	2.85	2.6	2.8	
29.....	4.0	4.1	4.55	5.4	.....	4.25	4.95	4.35	3.65	2.8	2.6	2.75
30.....	3.85	4.55	4.7	5.4	.....	4.65	4.9	4.6	3.85	2.8	2.6	.....
31.....	3.65	.....	4.6	6.1	.....	6.1	.....	4.35	.....	2.8	2.6	.....
1906-7.													
1.....	2.7	3.3	3.75	4.7	8.7	4.9	16.....	5.1	8.8	7.3	3.8	5.2	4.0
2.....	2.8	3.25	3.7	4.5	7.9	4.7	17.....	5.3	9.1	5.4	3.7	5.2	4.0
3.....	3.55	3.2	3.7	6.6	8.9	4.5	18.....	5.2	8.65	5.0	3.7	5.0	5.2
4.....	3.6	3.45	3.5	8.2	13.4	4.4	19.....	4.75	6.6	5.4	3.6	4.9	5.0
5.....	3.3	3.8	3.75	6.4	14.0	4.3	20.....	4.35	5.9	10.6	3.6	4.9	5.2
6.....	3.1	3.7	4.0	5.7	10.9	4.2	21.....	3.9	6.05	9.6	3.55	4.7	4.9
7.....	2.95	9.65	6.2	5.2	8.5	4.2	22.....	3.7	5.5	7.2	3.5	4.7	4.9
8.....	2.9	10.0	5.5	4.9	7.7	4.2	23.....	3.5	5.1	6.4	3.6	4.8	4.7
9.....	2.8	6.9	5.2	4.6	7.0	4.3	24.....	3.4	4.9	6.4	3.6	4.8	4.6
10.....	2.8	8.5	4.8	4.6	6.8	4.4	25.....	3.4	4.6	6.6	3.55	5.4	4.4
11.....	2.8	6.5	4.85	4.6	6.4	4.5	26.....	4.2	4.4	6.6	3.55	5.1	4.2
12.....	3.25	6.75	4.6	4.4	6.0	4.6	27.....	4.3	4.3	6.3	3.55	4.9	4.4
13.....	3.3	11.25	4.5	4.0	5.8	4.2	28.....	3.85	4.0	5.45	3.6	4.8	4.1
14.....	3.0	12.35	4.2	3.8	5.5	4.2	29.....	3.8	4.0	5.2	7.1	4.1
15.....	3.3	11.7	4.5	3.8	5.3	4.1	30.....	3.5	3.8	5.2	7.3	4.2
							31.....	3.4	5.0	8.7	4.5

NOTE.—Gage heights for May and June, 1906, were affected by log jams.

Daily discharge, in second-feet, of North Fork of Santiam River at Mehama, Oreg., for 1905-1907.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1905.				1905.				1905.			
1.....		780	660	11.....	1,000	740	625	21.....	865	700	700
2.....		780	660	12.....	1,000	740	700	22.....	865	700	700
3.....		780	660	13.....	1,000	740	910	23.....	865	700	660
4.....		780	660	14.....	955	740	820	24.....	820	700	660
5.....		780	660	15.....	910	740	700	25.....	820	660	3,010
6.....		780	660	16.....	910	660	660	26.....	820	660	3,010
7.....		780	660	17.....	910	740	740	27.....	820	660	1,380
8.....		780	625	18.....	910	740	700	28.....	820	700	1,500
9.....		740	625	19.....	865	740	700	29.....	820	700	1,500
10.....		740	625	20.....	865	700	700	30.....	780	700	1,700
								31.....	780	660	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1,500	1,770	2,920	3,010	6,410	5,580	5,450	4,330	2,920	2,130	910	740
2.....	1,770	1,570	4,330	2,750	6,700	5,060	4,330	3,470	2,590	2,130	910	700
3.....	1,570	1,570	5,060	2,590	5,580	4,810	3,670	3,470	2,750	1,980	910	700
4.....	9,730	1,570	4,570	2,750	4,810	4,690	3,380	3,470	3,880	1,910	865	700
5.....	4,570	1,570	4,330	3,100	4,330	4,330	3,380	3,470	3,280	1,840	865	700
6.....	5,190	1,380	4,570	3,280	3,780	4,940	3,880	2,920	4,330	1,700	865	700
7.....	9,000	1,320	5,580	3,280	3,470	5,320	4,330	2,920	5,320	1,570	865	700
8.....	6,700	1,260	5,850	3,470	3,100	5,850	4,330	2,920	4,570	1,500	865	700
9.....	4,810	1,210	4,330	4,570	2,840	5,580	5,060	3,280	4,570	1,440	865	780
10.....	3,670	1,210	3,670	3,990	2,670	5,990	4,330	3,470	4,570	1,380	820	780
11.....	2,920	1,210	3,100	5,580	2,510	4,810	4,330	4,330	3,670	1,380	820	740
12.....	2,590	1,100	2,920	4,330	2,430	4,100	4,330	3,190	3,880	1,320	820	820
13.....	2,280	1,100	2,670	5,060	2,280	3,670	3,990	2,840	3,670	1,320	820	1,260
14.....	1,980	1,050	2,590	4,330	2,280	3,100	3,880	3,100	3,100	1,320	820	2,590
15.....	4,100	1,000	2,590	3,670	2,750	2,750	3,280	4,330	3,280	1,260	820	2,750
16.....	3,470	1,000	2,590	5,060	2,920	2,590	3,470	2,750	5,320	1,210	820	1,210
17.....	3,100	1,000	6,270	5,060	4,100	2,280	3,470	2,510	4,330	1,210	820	1,150
18.....	3,190	1,500	5,320	4,690	7,630	2,350	2,920	2,510	3,780	1,100	820	1,000
19.....	2,670	3,880	5,320	3,880	13,300	2,280	2,920	2,840	3,280	1,100	780	1,000
20.....	2,360	3,470	4,450	3,280	15,000	2,130	2,920	2,750	3,010	1,100	780	910
21.....	2,130	2,430	3,780	3,010	14,000	2,130	4,100	3,280	2,750	1,050	780	865
22.....	1,980	2,130	3,190	3,280	10,700	2,130	3,670	3,280	2,750	1,050	780	820
23.....	1,840	1,980	2,920	7,960	9,920	1,980	3,470	3,280	2,280	1,050	740	820
24.....	1,910	1,770	2,590	17,100	8,300	2,350	3,280	2,920	2,280	1,000	740	1,050
25.....	4,570	1,700	2,430	9,730	7,160	1,150	4,810	2,750	2,130	1,000	740	1,260
26.....	4,810	3,100	6,700	7,800	8,300	2,750	4,810	2,920	2,650	955	740	1,000
27.....	3,470	2,750	4,940	6,560	9,000	2,920	4,220	2,750	1,910	955	740	910
28.....	2,840	2,430	4,100	5,580	6,850	2,840	4,810	2,590	1,910	955	740	910
29.....	2,430	2,590	3,380	5,320	.....	2,840	4,220	3,010	1,910	910	740	865
30.....	2,200	3,380	3,670	5,320	.....	3,570	4,100	3,470	2,200	910	740	865
31.....	1,910	.....	3,470	7,310	.....	7,310	.....	3,010	.....	910	740	.....

Daily discharge, in second-feet, of North Fork of Santiam River at Mehama, Oreg., for 1905-1907—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1906-7.							1906-7.						
1.....	820	1,440	2,060	3,670	17,800	4,780	16.....	4,570	18,200	11,700	2,130	5,500	2,900
2.....	910	1,380	1,980	3,280	14,200	4,340	17.....	5,060	19,700	5,320	1,980	5,500	2,900
3.....	1,770	1,320	1,980	9,000	18,700	3,900	18.....	4,810	17,500	4,330	1,980	5,000	5,500
4.....	1,840	1,640	1,700	15,500	42,000	3,680	19.....	3,680	9,000	5,320	1,840	4,780	5,000
5.....	1,440	2,130	2,060	8,300	45,400	3,480	20.....	3,010	6,700	27,100	1,840	4,780	5,500
6.....	1,210	1,980	2,430	6,130	28,700	3,280	21.....	2,280	7,160	22,100	1,770	4,340	4,780
7.....	1,050	22,400	7,630	4,810	17,000	3,280	22.....	1,980	5,580	11,300	1,700	4,340	4,780
8.....	1,000	24,100	5,580	4,100	13,700	3,280	23.....	1,700	4,570	8,300	1,840	4,560	4,340
9.....	910	10,100	4,810	3,470	11,200	3,480	24.....	1,570	4,100	8,300	1,840	4,560	4,120
10.....	910	16,800	3,880	3,470	10,500	3,680	25.....	1,570	3,470	9,000	1,770	6,040	3,680
11.....	910	8,650	3,990	3,470	9,080	3,900	26.....	2,740	3,100	9,000	1,770	5,240	3,280
12.....	1,380	9,540	3,470	3,100	7,800	4,120	27.....	2,900	2,920	7,960	1,770	4,780	3,680
13.....	1,440	30,400	3,280	2,430	7,200	3,280	28.....	2,200	2,430	5,450	1,840	4,560	3,080
14.....	1,100	36,200	2,750	2,130	6,320	3,280	29.....	2,130	2,430	4,810	10,900	.....	3,080
15.....	1,440	32,700	3,280	2,130	5,760	3,080	30.....	1,700	2,130	4,810	11,700	.....	3,280
							31.....	1,570	.....	4,330	17,800	.....	3,900

NOTE.—Daily discharge determined from rating curves applicable as follows: July 11, 1905, to Feb. 5, 1907, well defined below and fairly well defined above 4,000 second-feet; Feb. 6 to Mar. 31, 1907, fairly well defined.

Monthly discharge of North Fork of Santiam River at Mehama, Oreg., for 1905-1907.

[Drainage area, 740 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
July 11-31.....	1,000	780	876	1.18	0.92	36,500	A.
August.....	780	660	727	.982	1.13	44,700	A.
September.....	3,010	625	952	1.29	1.44	56,600	A.
1905-6.							
October.....	9,730	1,500	3,460	4.68	5.40	213,000	A.
November.....	3,880	1,000	1,830	2.47	2.76	109,000	A.
December.....	6,700	2,430	4,010	5.42	6.25	247,000	A.
January.....	17,100	2,590	5,050	6.82	7.86	311,000	A.
February.....	15,000	2,280	6,180	8.35	8.70	343,000	A.
March.....	7,310	1,150	3,680	4.97	5.73	226,000	A.
April.....	5,450	2,920	3,970	5.36	5.98	236,000	A.
May.....	4,330	2,510	3,170	4.28	4.93	195,000	C.
June.....	5,320	1,910	3,280	4.43	4.94	195,000	C.
July.....	2,130	910	1,310	1.77	2.04	80,600	A.
August.....	910	740	809	1.09	1.26	49,700	A.
September.....	2,750	700	1,030	1.39	1.55	61,300	A.
The year.....	15,000	700	3,150	4.20	57.40	2,270,000	
1906-7.							
October.....	5,060	820	1,990	2.69	3.10	122,000	A.
November.....	36,200	1,320	10,300	13.9	15.51	613,000	B.
December.....	27,100	1,700	6,450	8.72	10.05	397,000	B.
January.....	17,800	1,700	4,500	6.08	7.01	277,000	A.
February.....	45,400	4,340	11,400	15.4	16.03	633,000	B.
March.....	5,500	2,900	3,830	5.17	5.96	236,000	B.
The period.....						2,278,000	

SANTIAM RIVER AT JEFFERSON, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 11, T. 10 S., R. 3 W., at the Southern Pacific Railroad bridge in Jefferson, about 2 $\frac{1}{2}$ miles below junction of North and South forks and about 9 miles above mouth.

Records available.—October 8, 1905, to July 1, 1906; October 1, 1907, to September 30, 1910.

Drainage area.—1,890 square miles.

Gage.—Vertical staff on center pier of railroad bridge; some of the high-water readings have been made from a vertical staff on right bank.

Channel.—Rock and coarse gravel; practically permanent. Readings in 1905 and 1906 were affected by backwater from logs that lodged in the river below.

Discharge measurements.—Made from Southern Pacific Railroad bridge or from the highway bridge just below it.

Diversions.—The Albany power canal diverts water from South Fork of Santiam River near Lebanon; the Salem power canal, from North Fork of Santiam River near Stayton; and water is diverted from North Fork for irrigation near West Stayton. No measurements made of these diversions until 1911. The discharges presented herewith therefore represent unappropriated flow.

Accuracy.—Results good for 1907 to 1910. Estimates of discharge withheld for 1905 and 1906 on account of poor data.

Cooperation.—Gage readings furnished by S. A. Pease, of Jefferson Mill Co., and the United States Weather Bureau.

Discharge measurements of Santiam River at Jefferson, Oreg., in 1905-6 and 1908-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1909.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 18	L. R. Allen.....	3.41	817	Jan. 16	Howard Kimble.....	10.33	47,100
1906.				16	.....do.....	11.67	53,700
Jan. 3	L. R. Allen.....	4.76	5,790	17	.....do.....	7.79	34,900
Mar. 30	.....do.....	5.50	6,170	1910.			
1908.				Sept. 19	F. F. Henshaw.....	.50	460
Oct. 15	H. D. McGlashan.....	3.75	9,550				

Daily gage height, in feet, of Santiam River at Jefferson, Oreg., for 1905-6 and 1907-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....		4.5	6.15	6.4	7.25	7.6	7.4	5.8	5.5			
2.....		4.4	6.85	6.0	7.0	7.1	6.5	5.8	5.2			
3.....		4.3	6.95	5.8	6.8	6.9	6.2	5.6	5.8			
4.....		4.2	6.9	5.7	6.6	6.8	5.6	5.5	6.0			
5.....		4.15	6.5	5.95	6.3	6.5	5.2	5.2	5.8			
6.....		4.1	6.5	6.0	6.0	6.8	5.2	5.2	5.6			
7.....		4.0	6.9	6.1	5.8	6.8	5.2	5.2	6.6			
8.....	7.5	4.0	7.4	6.0	5.6	7.0	5.2	5.2	6.6			
9.....	6.6	3.9	6.8	6.8	5.5	7.0	5.0	5.0	6.4			
10.....	5.95	3.9	6.2	6.7	5.4	6.9	5.8	4.8	6.2			
11.....	5.4	3.8	6.0	6.6	5.2	6.7	5.8	4.8	6.0			
12.....	5.0	3.8	5.8	6.8	5.1	6.2	5.5	4.8	5.8			
13.....	4.8	3.7	5.5	7.5	5.0	6.0	5.2	4.8	5.6			
14.....	4.6	3.7	5.4	7.1	4.95	6.2	5.2	5.0	5.5			
15.....	4.8	3.6	5.2	6.9	5.3	6.3	5.2	6.0	5.4			
16.....	5.9	3.6	5.2	7.1	5.4	6.6	5.2	5.4	6.4			
17.....	5.4	3.6	6.2	7.95	5.8	6.9	5.2	5.0	5.1			
18.....	5.7	3.9	6.6	8.1	6.95	5.0	5.0	5.0	5.8			
19.....	5.4	4.5	6.5	7.2	9.5	6.6	5.0	5.0	5.6			
20.....	5.0	6.1	6.8	6.8	8.8	5.0	5.0	5.0	5.2			
21.....	4.8	5.35	6.5	6.4	10.2	5.0	5.2	5.2	5.2			
22.....	4.65	5.0	6.0	6.2	8.9	5.0	5.2	5.6	4.8			
23.....	4.5	4.7	5.8	7.4	8.2	5.0	5.2	5.6	4.6			
24.....	4.5	4.5	5.5	9.7	8.6	5.0	5.2	5.4	4.6			
25.....	4.8	4.4	5.4	8.8	8.8	5.0	5.2	5.2	4.6			
26.....	6.5	4.5	7.6	8.2	8.2	6.9	6.5	5.2	4.5			
27.....	5.8	5.6	7.4	7.6	9.0	6.7	5.8	5.2	4.6			
28.....	5.4	5.3	6.8	7.2	8.2	6.5	6.8	5.2	4.6			
29.....	5.0	5.3	6.5	6.9		6.4	7.0	5.5	4.6			
30.....	4.8	6.0	6.8	7.1		6.2	6.0	5.8	4.8			
31.....	4.6		6.95	7.4		7.0		5.8				
1907-8.												
1.....	0.9	1.1	3.9	4.6	2.6	2.9	3.7	3.6	2.8	2.2		
2.....	1.1	1.3	3.5	4.2	2.5	2.9	3.7	3.5	2.8	2.2		
3.....	1.4	1.7	3.2	4.1	2.4	2.9	3.6	3.4	2.8	2.0		
4.....	1.1	1.4	3.0	4.1	2.5	2.8	3.5	3.3	2.8			
5.....	1.1	1.2	3.0	4.0	2.8	2.7	3.4	3.2	2.7			
6.....	.9	1.1	2.8	4.0	4.0	2.6	3.3	3.1	2.6	1.8		
7.....	.8	1.1	3.0	4.0	4.7	2.5	3.2	3.0	2.5	1.7		
8.....	.8	1.0	3.6	4.0	4.0	2.4	3.1	3.8	2.4		0.65	
9.....	.8	1.0	3.8	5.2	3.9	2.3	3.0	3.8	2.7			
10.....	.8	.9	3.8	4.8	3.7	2.4	3.1	3.6	2.8	1.5		
11.....	.8	.9	4.2	4.8	3.4	2.6	3.2	3.4	2.8			
12.....	.8	.8	4.6	4.6	3.2	2.8	3.3	3.1	2.6			
13.....	.8	.8	7.0	4.3	3.0	3.0	3.4	3.0	2.4	1.3		
14.....	.8	.8	7.1	4.3	2.9	3.6	3.6	2.9	2.6	1.3		
15.....	.8	.9	6.8	4.2	2.8	10.4	3.5	3.0	2.2	1.3		
16.....	.8	1.1	4.8	4.0	3.0	15.3	3.5	4.5	2.2	1.2		
17.....	.8	1.2	4.3	3.8	3.4	10.2	3.4	4.8	2.2	1.2	.6	
18.....	.8	1.1	3.9	3.5	3.1	7.2	4.7	4.8	2.2			
19.....	.8	1.1	3.7	4.5	3.0	6.0	5.2	4.9	2.4			
20.....	.8	2.2	3.8	5.8	2.9	5.2	5.0	5.0	2.8	1.2		
21.....	.8	3.5	4.0	5.1	2.8	4.8	4.6	4.8	3.2			
22.....	.8	3.6	13.6	4.1	2.7	4.0	3.9	4.6	4.0			
23.....	.8	4.9	11.6	4.1	2.6	3.9	5.0	4.1	3.2	1.0		
24.....	.8	6.8	10.6	3.8	2.6	3.9	6.0	3.9	2.8		.6	
25.....	.8	12.0	10.0	3.7	2.6	4.0	5.0	3.8	2.6			
26.....	.8	8.0	14.6	3.4	2.6	3.8	4.6	3.7	2.5			
27.....	.8	6.2	10.2	3.0	2.7	3.8	4.2	3.5	2.8	.85		
28.....	.8	5.2	7.4	3.0	3.0	3.7	3.9	3.3	2.6			
29.....	.8	4.8	6.0	2.8	2.9	3.6	3.7	3.0	2.3		.75	
30.....	.8	4.2	5.2	2.9		3.7	3.5	3.0	2.2		1.3	
31.....	1.1		4.8	2.7		3.7		3.0			1.1	

Daily gage height, in feet, of Santiam River at Jefferson, Oreg., for 1905-6 and 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	0.5	3.5	2.4	3.5	3.5	4.8	4.5	3.2	4.8	1.3	-----	0.5
2.....	.5	2.8	2.2	3.4	3.2	7.5	4.5	3.0	4.4	1.3	1.0	.5
3.....	.5	2.5	2.0	3.2	3.8	6.2	4.1	3.2	3.9	1.2	.95	.5
4.....	.5	2.0	1.9	6.2	3.9	6.2	3.8	3.8	3.5	-----	.9	.5
5.....	.5	1.6	1.8	6.2	3.8	5.5	3.7	3.8	3.4	1.2	.85	-----
6.....	.5	1.6	1.9	5.9	3.7	4.9	3.6	3.2	3.1	1.8	.85	.5
7.....	.5	1.5	1.7	7.2	3.5	4.0	3.4	2.8	2.9	3.4	.8	.5
8.....	.5	1.4	1.7	8.0	3.4	4.3	3.2	2.5	2.8	2.5	-----	.45
9.....	.5	1.4	1.7	6.0	3.3	4.8	3.2	3.0	2.7	2.0	.8	.45
10.....	.5	1.3	1.6	4.7	3.3	4.2	3.2	2.8	2.4	1.7	.8	.45
11.....	.5	1.3	1.5	4.5	3.3	3.9	3.0	3.1	2.4	-----	.75	.45
12.....	.5	1.2	1.5	3.5	3.3	3.8	3.1	3.2	2.3	2.0	.75	-----
13.....	.5	1.2	2.9	3.5	3.3	3.5	2.9	3.0	2.1	1.7	.7	.45
14.....	3.1	1.1	3.2	3.2	4.0	3.2	2.9	2.8	2.2	1.6	.7	.45
15.....	3.8	1.0	2.5	5.3	4.5	3.4	2.8	2.7	2.0	1.4	-----	.45
16.....	3.3	1.0	2.4	10.5	6.5	3.4	2.8	3.0	2.0	1.4	.7	.4
17.....	2.4	1.1	2.2	8.3	6.9	3.8	2.8	2.7	2.0	1.3	.65	.4
18.....	2.0	1.2	2.0	9.5	7.3	3.8	2.8	2.6	-----	-----	.6	.4
19.....	1.8	2.7	1.9	9.4	7.0	3.5	2.7	2.5	-----	1.2	.6	-----
20.....	3.4	2.7	1.9	11.9	6.8	3.4	2.6	2.5	-----	1.2	.6	.4
21.....	2.9	4.8	1.8	10.7	5.6	3.0	2.4	2.5	1.7	1.1	-----	.45
22.....	2.2	5.9	1.7	9.2	5.4	3.1	2.3	2.9	-----	1.0	-----	.6
23.....	2.0	6.0	2.5	7.0	4.8	3.0	2.2	2.7	-----	1.0	.55	.55
24.....	1.8	5.5	4.3	6.2	4.8	2.8	2.2	2.8	-----	1.0	.55	.5
25.....	1.7	4.5	3.2	5.5	6.2	2.8	-----	2.8	-----	-----	.55	.5
26.....	1.7	3.8	5.7	5.0	5.5	2.8	2.3	2.9	-----	1.0	.5	-----
27.....	1.6	3.2	4.3	4.5	5.1	3.0	2.9	3.5	1.5	1.4	.5	.5
28.....	1.6	2.9	4.5	4.0	5.6	2.9	4.4	4.1	1.4	1.4	.5	.5
29.....	1.5	2.0	6.6	3.8	-----	3.2	3.8	4.5	1.3	1.2	.5	.5
30.....	1.8	2.8	5.0	3.5	-----	3.3	3.2	-----	1.3	1.2	-----	1.0
31.....	4.0	-----	4.5	3.2	-----	3.4	-----	5.4	-----	1.0	.5	-----
1909-10.												
1.....	1.4	5.2	7.3	3.4	4.9	11.4	3.2	2.4	1.6	1.0	.6	.5
2.....	1.1	5.6	6.4	3.4	5.5	14.5	3.0	2.6	1.6	1.0	.6	.5
3.....	-----	7.5	5.5	2.7	4.1	12.0	3.8	2.4	1.5	1.0	.6	.5
4.....	.75	5.1	4.8	2.6	3.8	9.5	3.5	2.9	1.4	1.0	.5	-----
5.....	.70	4.2	4.5	2.4	3.6	7.6	3.4	3.3	1.5	.9	.5	.5
6.....	.7	3.8	4.2	2.4	3.2	7.0	3.5	3.0	1.4	.9	.5	.5
7.....	.9	3.0	4.0	2.4	3.2	6.0	3.7	2.8	1.4	.8	-----	.5
8.....	.8	3.2	4.0	2.8	3.1	5.4	3.8	2.8	1.5	.8	.5	.5
9.....	.8	4.2	5.8	2.8	3.0	5.0	3.9	2.8	1.6	.8	.5	.5
10.....	.8	4.8	5.6	2.5	3.1	4.6	3.9	2.9	1.7	-----	.5	.5
11.....	.7	5.2	4.9	2.5	3.2	4.7	4.1	3.8	1.9	.8	.5	.4
12.....	.6	4.2	7.5	2.4	3.8	5.0	4.0	3.6	1.5	.8	.5	.4
13.....	.55	3.9	8.6	2.3	6.6	5.6	3.9	3.2	1.6	.8	.5	.4
14.....	.55	3.4	7.4	2.3	6.3	5.5	3.7	3.0	1.3	.7	-----	.4
15.....	.55	3.2	6.2	2.2	5.4	5.4	3.5	2.8	1.2	.7	.5	.4
16.....	.5	2.9	5.5	2.2	4.7	5.2	3.1	2.8	1.2	.7	.5	.4
17.....	-----	2.7	4.8	2.1	4.9	5.0	3.2	2.6	1.2	-----	.5	.4
18.....	.5	4.2	4.4	2.1	5.7	4.9	3.4	2.4	1.2	.8	.5	-----
19.....	.5	7.8	3.8	4.4	6.0	5.0	3.6	2.3	1.2	.7	.5	.5
20.....	.8	12.8	3.1	3.6	6.7	4.8	3.2	2.2	1.1	.7	.5	.5
21.....	1.8	8.5	3.1	3.2	5.1	4.4	3.5	2.1	1.2	.7	-----	.7
22.....	2.0	12.6	3.0	4.3	4.8	4.2	3.4	2.0	1.2	.7	.5	.7
23.....	1.6	16.5	3.0	7.0	4.6	5.1	3.4	2.0	1.4	.7	.5	.7
24.....	1.3	15.1	3.0	8.0	6.0	4.5	3.6	2.0	1.3	-----	.5	.7
25.....	1.1	11.0	2.9	7.2	8.2	4.0	3.7	2.1	1.2	.7	.5	.7
26.....	1.0	8.0	2.8	5.8	6.6	3.6	3.6	2.1	-----	.7	.5	.7
27.....	1.0	6.2	2.7	5.1	6.7	-----	3.4	1.9	1.2	.6	.5	.7
28.....	.9	5.8	2.6	6.8	9.0	3.2	3.0	1.7	1.2	.6	-----	.6
29.....	.9	6.6	2.5	6.6	-----	3.1	3.0	1.8	1.0	.6	.5	.6
30.....	1.6	9.3	2.4	5.6	-----	3.1	2.8	1.6	1.0	.6	.5	.6
31.....	1.5	-----	3.4	5.0	-----	3.0	-----	1.6	-----	.6	.5	-----

NOTE.—Gage heights from May 15, 1908 to Sept. 30, 1910, are from readings made for the United States Geological Survey on the Weather Bureau gage except the Sunday readings, which were made for the United States Weather Bureau.

Daily discharge, in second-feet, of Santiam River at Jefferson, Oreg., for 1907-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	900	1,190	9,400	12,800	4,610	5,500	8,500	8,100	5,200	3,530	-----	-----
2.....	1,190	1,520	7,700	10,800	4,330	5,500	8,500	7,700	5,200	3,530	-----	-----
3.....	1,700	2,330	6,500	10,300	4,060	5,500	8,100	7,300	5,200	3,020	-----	-----
4.....	1,190	1,700	5,800	10,300	4,330	5,200	7,700	6,900	5,200	2,860	-----	-----
5.....	1,190	1,350	5,800	9,850	5,200	4,900	7,300	6,500	4,900	2,710	-----	-----
6.....	900	1,190	5,200	9,850	9,850	4,610	6,900	6,150	4,610	2,550	-----	-----
7.....	770	1,190	5,800	9,850	13,300	4,330	6,500	5,800	4,330	2,330	-----	-----
8.....	770	1,040	8,100	9,850	9,850	4,060	6,150	8,950	4,060	2,190	595	-----
9.....	770	1,040	8,950	15,800	9,400	3,790	5,809	8,950	4,900	2,040	-----	-----
10.....	770	900	8,950	13,800	8,500	4,060	6,150	8,100	5,200	1,900	-----	-----
11.....	770	900	10,800	13,800	7,300	4,610	6,500	7,300	5,200	1,770	-----	-----
12.....	770	770	12,800	12,800	6,500	5,200	6,900	6,150	4,610	1,650	-----	-----
13.....	770	770	26,100	11,300	5,800	5,800	7,300	5,800	4,060	1,520	-----	-----
14.....	770	770	26,700	11,300	5,500	8,100	8,100	5,500	4,610	1,520	-----	-----
15.....	770	900	24,900	10,800	5,200	47,600	7,700	5,800	3,530	1,520	-----	-----
16.....	770	1,190	13,800	9,850	5,800	83,600	7,700	12,300	3,530	1,350	-----	-----
17.....	770	1,350	11,300	8,950	7,200	46,200	7,300	13,800	3,530	1,350	540	-----
18.....	770	1,190	9,400	7,700	6,150	27,300	13,300	13,800	3,530	1,350	-----	-----
19.....	770	1,190	8,500	12,300	5,800	20,100	15,800	14,300	4,060	1,350	-----	-----
20.....	770	3,530	8,950	18,900	5,500	15,800	14,800	14,800	5,200	1,350	-----	-----
21.....	770	7,700	9,850	15,300	5,200	13,800	12,800	13,800	6,500	1,250	-----	-----
22.....	770	8,100	70,000	10,300	4,900	9,850	9,400	12,800	9,850	1,140	-----	-----
23.....	770	14,300	56,000	10,300	4,610	9,400	14,800	10,300	6,500	1,040	-----	-----
24.....	770	24,900	49,000	8,950	4,610	9,400	20,100	9,400	5,200	990	540	-----
25.....	770	58,800	44,800	8,500	4,610	9,850	14,800	8,950	4,610	930	-----	-----
26.....	770	32,100	78,000	7,300	4,610	8,950	12,800	8,500	4,330	885	-----	-----
27.....	770	21,300	46,200	5,800	4,900	8,950	10,800	7,700	5,200	835	-----	-----
28.....	770	15,800	28,500	5,800	5,800	8,500	9,400	6,900	4,610	825	-----	-----
29.....	770	13,800	20,100	5,200	5,500	8,100	8,500	5,800	3,790	815	710	-----
30.....	770	10,800	15,800	5,500	-----	8,500	7,700	5,800	3,530	805	1,520	-----
31.....	1,190	-----	13,800	4,900	-----	8,500	-----	5,800	-----	800	1,190	-----
1908-9.												
1.....	440	7,700	4,060	7,700	7,700	13,800	12,300	6,500	13,800	1,520	1,040	440
2.....	440	5,200	3,530	7,300	6,500	29,100	12,300	5,800	11,800	1,520	1,040	440
3.....	440	4,330	3,020	6,500	8,950	21,300	10,300	6,500	9,400	1,350	970	440
4.....	440	3,020	2,780	21,300	9,400	21,300	8,950	8,950	7,700	1,350	900	440
5.....	440	2,110	2,550	21,300	8,950	17,300	8,500	8,950	7,300	1,350	835	440
6.....	440	2,110	2,780	19,500	8,500	14,300	8,100	6,500	6,150	2,550	835	440
7.....	440	1,900	2,330	27,300	7,700	9,850	7,300	5,200	5,500	7,300	770	440
8.....	440	1,700	2,330	32,100	7,300	11,300	6,500	4,330	5,200	4,330	770	395
9.....	440	1,700	2,330	20,100	6,900	13,800	6,500	5,800	4,900	3,020	770	395
10.....	440	1,520	2,110	13,300	6,900	10,800	6,500	5,200	4,060	2,330	770	395
11.....	440	1,520	1,900	12,300	6,900	9,400	5,800	6,150	4,060	2,680	710	395
12.....	440	1,350	1,900	7,700	6,900	8,950	6,150	6,500	3,790	3,020	710	395
13.....	440	1,350	5,500	7,700	6,900	7,700	5,500	5,800	3,270	2,330	650	395
14.....	6,150	1,190	6,500	6,500	9,850	6,500	5,500	5,200	3,530	2,110	650	395
15.....	8,950	1,040	4,330	16,300	12,300	7,300	5,200	4,900	3,020	1,700	650	395
16.....	6,900	1,040	4,060	48,300	23,100	7,300	5,200	5,800	3,020	1,700	650	350
17.....	4,060	1,190	3,530	33,900	25,500	8,950	5,200	4,900	3,020	1,520	595	350
18.....	3,020	1,350	3,020	41,300	27,900	8,950	5,200	4,610	2,850	1,410	540	350
19.....	2,550	4,900	2,780	40,600	26,100	7,700	4,900	4,330	2,680	1,350	540	350
20.....	7,300	4,900	2,780	58,100	24,900	7,300	4,610	4,330	2,500	1,350	540	350
21.....	5,500	13,800	2,550	49,700	17,800	5,800	4,060	4,330	2,330	1,190	520	395
22.....	3,530	19,500	2,330	39,300	16,800	6,150	3,790	5,500	2,260	1,040	510	540
23.....	3,020	20,100	4,330	26,100	13,800	5,800	3,530	4,900	2,190	1,040	490	490
24.....	2,550	17,300	11,300	21,300	13,800	5,200	3,530	5,200	2,120	1,040	490	440
25.....	2,330	12,300	6,500	17,300	21,300	5,200	3,660	5,200	2,040	1,040	490	440
26.....	2,330	8,950	18,300	14,800	17,300	5,200	3,790	5,500	1,970	1,040	440	440
27.....	2,110	6,500	11,300	12,300	15,300	5,800	5,500	7,700	1,900	1,700	440	440
28.....	2,110	5,500	12,300	9,850	17,800	5,500	11,800	10,300	1,700	1,700	440	440
29.....	1,900	5,200	23,700	8,950	-----	6,500	8,950	12,300	1,520	1,350	440	440
30.....	2,550	5,200	14,800	7,700	-----	6,900	6,500	14,600	1,520	1,350	440	1,040
31.....	9,850	-----	12,300	6,500	-----	7,300	-----	16,800	-----	1,040	440	-----

Daily discharge, in second-feet, of Santiam River at Jefferson, Oreg., for 1907-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,700	15,800	27,900	7,300	14,300	54,600	6,500	4,060	2,110	1,040	540	440
2.....	1,190	17,800	22,500	7,300	17,300	77,200	5,800	4,610	2,110	1,040	540	440
3.....	1,040	29,100	17,300	4,900	10,300	58,800	8,950	4,060	1,900	1,040	540	440
4.....	710	15,300	13,800	4,610	8,950	41,300	7,700	5,500	1,700	1,040	440	440
5.....	650	10,800	12,300	4,060	8,100	29,700	7,300	6,900	1,900	900	440	440
6.....	650	8,950	10,800	4,060	6,500	26,100	7,700	5,800	1,700	900	440	440
7.....	900	5,800	9,850	4,060	6,500	20,100	8,500	5,200	1,700	770	440	440
8.....	770	6,500	9,850	5,200	6,150	16,800	8,950	5,200	1,900	770	440	440
9.....	770	10,800	18,900	5,200	5,800	14,800	9,400	5,200	2,110	770	440	440
10.....	770	13,800	17,800	4,330	6,150	12,800	9,400	5,500	2,330	770	440	440
11.....	650	15,800	14,300	4,330	6,500	13,300	10,300	8,950	2,780	770	440	350
12.....	540	10,800	29,100	4,060	8,950	14,800	9,850	8,100	1,900	770	440	350
13.....	490	9,400	35,700	3,790	23,700	17,800	9,400	6,500	2,110	770	440	350
14.....	490	7,300	28,500	3,790	21,900	17,300	8,500	5,800	1,520	650	440	350
15.....	490	6,500	21,300	3,530	16,800	16,800	7,700	5,200	1,350	650	440	350
16.....	440	5,500	17,300	3,530	13,300	15,800	6,150	5,200	1,350	650	440	350
17.....	440	4,900	13,800	3,270	14,300	14,800	6,500	4,610	1,350	710	440	350
18.....	440	10,800	11,800	3,270	18,300	14,300	7,300	4,060	1,350	770	440	395
19.....	440	30,900	8,950	11,800	20,100	14,800	8,100	3,790	1,350	650	440	440
20.....	770	64,400	6,150	8,100	24,300	13,800	6,500	3,530	1,190	650	440	440
21.....	2,550	35,100	6,150	6,500	15,300	11,800	7,700	3,270	1,350	650	440	650
22.....	3,020	63,000	5,800	11,300	13,800	10,800	7,300	3,020	1,350	650	440	650
23.....	2,110	93,200	5,800	26,100	12,800	15,300	7,300	3,020	1,700	650	440	650
24.....	1,520	32,000	5,800	32,100	20,100	12,300	8,100	3,020	1,520	650	440	650
25.....	1,190	51,800	5,500	27,300	33,300	9,850	8,500	3,270	1,350	650	440	650
26.....	1,040	32,100	5,200	18,900	23,700	8,100	8,100	3,270	1,350	650	440	650
27.....	1,040	21,300	4,900	15,300	24,300	7,300	7,300	2,780	1,350	540	440	650
28.....	900	18,900	4,610	24,900	38,100	6,500	5,800	2,330	1,350	540	440	540
29.....	900	23,700	4,330	23,700	-----	6,150	5,800	2,550	1,040	540	440	540
30.....	2,110	39,900	4,060	17,800	-----	6,150	5,200	2,110	1,040	540	440	540
31.....	1,900	-----	7,300	14,800	-----	5,800	-----	2,110	-----	540	440	-----

NOTE.—Daily discharge determined from a fairly well-defined rating curve.

Monthly discharge of Santiam River at Jefferson, Oreg., for 1907-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907-8.					
October.....	1,700	770	863	53,100	B.
November.....	58,800	770	7,790	464,000	B.
December.....	78,000	5,200	21,200	1,300,000	B.
January.....	18,900	4,900	10,300	633,000	B.
February.....	13,300	4,060	6,170	355,000	B.
March.....	83,600	3,790	13,400	824,000	B.
April.....	20,100	5,800	9,600	571,000	B.
May.....	14,800	5,500	8,700	535,000	B.
June.....	9,850	3,530	4,830	287,000	B.
July.....	3,530	800	4,670	103,000	B.
August.....	1,520	-----	a 630	38,700	B.
September.....	-----	-----	a 500	29,800	C.
The year.....	83,600	-----	7,160	5,190,000	
1908-9.					
October.....	9,850	440	2,660	164,000	B.
November.....	20,100	1,040	5,520	328,000	B.
December.....	23,700	1,900	5,930	365,000	B.
January.....	58,100	6,500	21,400	1,320,000	B.
February.....	27,900	6,500	13,700	761,000	B.
March.....	29,100	5,200	9,750	601,000	B.
April.....	12,300	3,530	6,520	388,000	B.
May.....	16,800	4,330	6,730	414,000	B.
June.....	13,800	1,520	4,240	252,000	B.
July.....	7,300	1,040	1,910	117,000	B.
August.....	1,040	440	648	39,800	B.
September.....	1,040	350	436	25,900	B.
The year.....	58,100	350	6,590	4,780,000	

a Estimated.

Monthly discharge of Santiam River at Jefferson, Oreg., for 1907-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	3,020	440	1,050	64,600	B.
November.....	93,200	4,900	25,400	1,510,000	B.
December.....	35,700	4,060	13,100	806,000	B.
January.....	32,100	3,270	10,300	633,000	B.
February.....	38,100	5,800	15,700	872,000	B.
March.....	77,200	5,800	19,500	1,200,000	B.
April.....	10,300	5,200	7,720	459,000	B.
May.....	8,950	2,110	4,470	275,000	B.
June.....	2,780	1,040	1,640	97,600	B.
July.....	1,040	540	732	45,000	B.
August.....	540	440	450	27,700	B.
September.....	650	350	476	28,300	B.
The year.....	93,200	350	8,320	6,020,000	

MARION FORK OF SANTIAM RIVER AT MARION LAKE, NEAR HOOVER,
OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 6, T. 12 S., R. 8 E., at the outlet of Marion Lake, 28 miles above Hoover.

Records presented.—February 5, 1907, to September 30, 1910; fragmentary.

Drainage area.—26 square miles.

Gage.—Vertical staff. During 1907 a reference point from which height of water was measured; January to July, 1909, the gage used recorded maximum and minimum stages between observations; referred to same datum as gage used in 1907.

Channel.—Rocky; somewhat shifting; 15-foot weir August 1 to November 20, 1909, when it was washed out; November 24, 1909, to January 15, 1910, the remains of the weir formed the control; 23-foot broad-crested weir January 21 to September 30, 1910.

Discharge measurements.—Made by wading near gage.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Discharge measurements of Marion Fork of Santiam River at Marion Lake, near Hoover, Oreg., in 1906, 1907, and 1910.

Date.	Hydrographer.	Gage height.	Dis- charge.
1906. Sept. 7	J. C. Stevens.....	<i>Feet.</i> 5.55	<i>Sec.-ft.</i> 77
1907. July 27	H. D. McGlashan.....	5.50	85
1910. Oct. 7	F. C. Ebert.....	.88	85

Daily gage height, in feet, of Marion Fork of Santiam River at Marion Lake, near Hoover, Oreg., for 1907.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1907.												
1												
2							5.85					
3						6.30	5.85					
4						6.30	5.85			5.69		
5		8.50	5.75			6.30	5.85					
6			5.75							5.60		
7			5.76									
8			5.77									
9								5.59	5.55			
10									5.71			
11					6.58			5.55			5.69	
12				6.31	6.52							
13				6.33	6.50							
14				6.34								
15			5.67	6.31								
16			5.68				5.75					
17			5.72									
18			5.77			5.88			5.55			
19						5.88		5.52	5.83			
20												
21						5.85						
22												
23		6.00										
24		6.12		6.25	6.45		5.68					
25		6.11		6.22	6.41							
26		6.06	5.75	6.16	6.30			5.71				
27			5.78									
28			5.78				2.75					
29			5.71									
30			5.66									
31												

Maximum, minimum, and daily gage heights, in feet, of Marion Fork of Santiam River near Hoover, Oreg., for 1909.

Date.	Gage height.			Date.	Gage height.		
	Maximum.	Minimum.	Daily.		Maximum.	Minimum.	Daily.
Prior to Jan. 28, 1909	6.16	5.57		May 3 to 7	6.5	6.38	
Jan. 28			5.82	May 8			6.38
Jan. 29			5.82	May 9	6.38	6.07	
Jan. 30 to Feb. 24	6.0	5.67		May 10			6.07
Feb. 25			6.0	May 11 to 30	7.0	6.38	
Feb. 26			6.0	May 31			7.0
Feb. 27			6.0	June 1 to 8	7.25	6.38	
Feb. 28 to Mar. 26	6.0	5.58		June 9			6.42
Mar. 27			5.83	June 10 to 12	6.42	6.25	
Mar. 28 to 31	5.83	5.83		June 13			6.38
Apr. 1			5.83	June 14 to 19	6.42	6.25	
Apr. 2 to 25	6.38	5.75		June 20			6.25
Apr. 26			6.08	June 21 to 29	6.25	5.92	
Apr. 27 to 30	6.38	6.16		June 30			5.92
May 1			6.16	July 1 to 18	5.82	5.58	
May 2			6.5	July 19			5.38

NOTE.—These records were secured by means of a maximum-minimum gage. See description.

Daily gage height, in feet, of Marion Fork of Santiam River at Marion Lake, near Hoover, Oreg., for 1909-10.

1909.				1909.								
Aug. 1.....				1.17		Sept. 25.....					1.21	
Sept. 1.....				1.17		29.....					1.25	
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....			1.50	0.96	1.24	1.88	1.24	1.18	1.06	0.90	0.86	0.86
2.....			1.50	.92	1.18	2.32	1.30	1.16	1.06	.90	.86	.86
3.....	1.25	1.33	1.50	.92	1.14	2.26	1.42	1.22	1.06	.90	.86	.86
4.....			1.42	.92	1.14	2.14	1.38	1.22	1.02	.90	.86	.86
5.....			1.42	.90	1.14	2.02	1.28	1.22	1.04	.90	.86	.86
6.....			1.38	.90	1.12	1.86	1.26	1.18	1.02	.90	.86	.86
7.....	1.25		1.33	.90	1.12	1.68	1.22	1.20	1.00	.90	.86	.86
8.....			1.33	.90	1.10	1.54	1.22	1.24	1.00	.90	.86	.84
9.....			1.33	.90	1.10	1.48	1.22	1.28	.98	.90	.86	.84
10.....			1.29	.90	1.10	1.42	1.26	1.52	.96	.90	.86	.84
11.....			1.25	.88	1.16	1.40	1.28	1.60	.96	.90	.86	.84
12.....			1.25	.88	1.14	1.36	1.32	1.52	.98	.90	.86	.84
13.....	1.29		1.38	.85	1.22	1.40	1.30	1.38	.96	.90	.86	.86
14.....		1.31	1.50	.85	1.22	1.46	1.22	1.32	.96	.90	.86	.86
15.....		1.33	1.42	.83	1.20	1.48	1.18	1.26	.96	.88	.86	.86
16.....		1.42	1.38	.....	1.20	1.52	1.18	1.18	.98	.88	.86	.86
17.....	1.29	1.42	1.33	.....	1.22	1.46	1.18	1.16	.98	.88	.86	.86
18.....		2.00	1.33	.....	1.22	1.42	1.24	1.14	.98	.88	.86	.86
19.....		2.50	1.33	.....	1.22	1.48	1.34	1.16	.98	.86	.86	.86
20.....	1.31	3.00	1.29	.....	1.22	1.46	1.42	1.12	.98	.86	.86	.88
21.....			1.25	.92	1.22	1.42	1.42	1.10	.98	.86	.86	.88
22.....			1.21	1.04	1.22	1.42	1.38	1.10	1.00	.86	.86	.88
23.....			1.21	1.32	1.26	1.44	1.42	1.14	1.00	.86	.84	.88
24.....	1.25	2.42	.....	1.52	1.32	1.36	1.48	1.16	.98	.86	.84	.88
25.....		1.75	.....	1.46	1.32	1.28	1.54	1.20	.96	.86	.84	.86
26.....		1.50	1.12	1.42	1.38	1.22	1.54	1.18	.96	.86	.84	.86
27.....	1.25	1.50	1.12	1.36	1.42	1.16	1.40	1.16	.94	.86	.84	.86
28.....		1.42	1.04	1.36	1.52	1.12	1.32	1.12	.94	.86	.84	.86
29.....		1.46	1.04	1.34	.....	1.14	1.24	1.10	.92	.86	.86	.84
30.....		1.42	1.02	1.30	.....	1.16	1.22	1.10	.92	.86	.86	.84
31.....	1.25		1.00	1.26	.....	1.20	.....	1.08	.....	.86	.86	.....

NOTE.—Records of gage height and daily discharge Aug. 1 to Nov. 20, 1909, are for the 15-foot weir. Gage read in inches and reduced to feet and hundredths.
 Gage heights Nov. 24, 1909, to Jan. 15, 1910, and Oct. 19 to Dec. 31, 1910, made on lower gage; readings Jan. 21 to Sept. 30 made on the gages above the 23-foot broad-crested weir.

Daily discharge, in second-feet, of Marion Fork of Santiam River at Marion Lake, near Hoover, Oreg., for 1909-10.

1909.				1909.			
Aug. 1.....				70		Sept. 25.....	74
Sept. 1.....				70		29.....	78

Daily discharge, in second-feet, of Marion Fork of Santiam River at Marion Lake, near Hoover, Oreg., for 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....			183	90	135	248	135	126	108	87	82	82
2.....			183	85	126	338	145	123	108	87	82	82
3.....	78	86	183	85	120	326	164	132	108	87	82	82
4.....			168	85	120	300	158	132	103	87	82	82
5.....			168	82	120	276	142	132	106	87	82	82
6.....			160	82	117	244	139	126	103	87	82	82
7.....	78		151	82	117	210	132	129	100	87	82	82
8.....			151	82	114	185	132	135	100	87	82	79
9.....			151	82	114	175	132	142	97	87	82	79
10.....			144	82	114	164	139	182	95	87	82	79
11.....			137	79	123	161	142	196	95	87	82	79
12.....			137	79	120	155	148	182	97	87	82	79
13.....	82		160	76	132	161	145	158	95	87	82	82
14.....		84	183	76	132	171	132	148	95	87	82	82
15.....		86	168	73	129	175	126	139	95	84	82	82
16.....		95	160	76	129	182	126	126	97	84	82	82
17.....	82	95	151	78	132	171	126	123	97	84	82	82
18.....		158	151	81	132	164	135	120	97	84	82	82
19.....		221	151	84	132	175	151	123	97	82	82	82
20.....	84	291	144	88	132	171	164	117	97	82	82	84
21.....		530	137	90	132	164	164	114	97	82	82	84
22.....		760	130	106	132	164	158	114	100	82	82	84
23.....		510	130	148	139	168	164	120	100	82	79	84
24.....	78	406	125	182	148	155	175	123	97	82	79	84
25.....		235	120	171	148	142	185	129	95	82	79	82
26.....		183	114	164	158	132	185	126	95	82	79	82
27.....	78	183	114	155	164	123	161	123	92	82	79	82
28.....		168	102	155	182	117	148	117	92	82	79	82
29.....		175	102	151	.....	120	135	114	90	82	82	79
30.....		168	99	145	.....	123	132	114	90	82	82	79
31.....	78	.....	96	139	.....	129	.....	111	.....	82	82	.....

NOTE.—Daily discharge computed as follows: Aug. 1 to Nov. 20, 1909, from rating curve for 15-foot weir allowance has been made for possible roundness of crest, velocity of approach, and leakage, approximate; Nov. 21-23, 1909, estimated by an engineer who was on ground at time; Nov. 24, 1909, to Jan. 15, 1910, from a rating curve derived from the curve for weir and comparative readings on the lower and weir gages; poorly defined for January.

Discharge over the 23-foot weir computed from a rating curve based on one discharge measurement and the weir formula, allowing for velocity of approach and assuming leakage of 10 second-feet through the weir; curve well defined below 100 second-feet and fairly well defined for higher stages.

Monthly discharge of Marion Fork of Santiam River at Marion Lake, near Hoover, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.	
	Maximum.	Minimum.	Mean.			
1909.						
August.....				70.0	4,300	C.
September.....				72.8	4,330	C.
1909-10.						
October.....				80.0	4,920	C.
November.....	760	.....	.....	182	10,800	D.
December.....	183	96	.....	144	8,850	C.
January.....	182	73	.....	104	6,400	C.
February.....	182	114	.....	132	7,330	C.
March.....	338	117	.....	184	11,300	C.
April.....	185	126	.....	147	8,750	C.
May.....	196	111	.....	132	8,120	C.
June.....	108	90	.....	97.9	5,830	B.
July.....	87	82	.....	84.5	5,200	B.
August.....	82	79	.....	81.4	5,010	B.
September.....	84	79	.....	81.6	4,860	B.
The year.....	760	73	121	.....	87,400	

PUZZLE CREEK NEAR HOOVER,¹ OREG.

Location.—About in sec. 29, T. 11 S., R. 8 E., at mouth of stream, 25 miles above Hoover.

Records available.—February 5 to November 13, 1907; fragmentary.

Drainage area.—Not measured.

Gage.—Gage heights obtained by measuring down from a reference point.

Channel.—Rocky and rough, with large fall.

Discharge measurements.—Made by wading.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Discharge measurements of Puzzle Creek near Hoover, Oreg., in 1906-7.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1906. Sept. 7	J. C. Stevens.....	<i>Fect.</i> 6.16	<i>Sec.-ft.</i> 65	1907. July 27	H. D. McGlashan.....	<i>Fect.</i> 6.15	<i>Sec.-ft.</i> 94

Daily gage height, in feet, of Puzzle Creek near Hoover, Oreg., for 1907.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....												
2.....							6.18					
3.....										6.05		
4.....						5.91						
5.....		7.67	5.95				6.08					
6.....						5.82				6.00		
7.....												
8.....			6.20									
9.....								5.97	6.00			
10.....												
11.....					5.91						6.00	
12.....				6.12	6.00			5.97				
13.....											5.98	
14.....												
15.....			6.00	6.08								
16.....							6.18					
17.....						6.18						
18.....			6.17						6.18			
19.....								5.92				
20.....						6.26						
21.....												
22.....		6.17								5.92		
23.....												
24.....					5.96		6.30					
25.....												
26.....		6.00	5.91	6.04	5.91			6.18				
27.....								6.18				
28.....							6.28					
29.....												
30.....												
31.....												

¹ Formerly known as near Detroit.

NORTH FORK OF PUZZLE CREEK NEAR HOOVER, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 29, T. 11 S., R. 8 E., about 26 miles above Hoover.

Records available.—August 1, 1909, to September 30, 1910; fragmentary.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Rocky; control is remains of an old weir which may shift slightly; 6-foot rectangular weir until flood of November, 1909, when it was badly damaged.

Discharge measurements.—Made by wading near gage.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Observed discharges of North Fork of Puzzle Creek near Hoover, Oreg., in 1909.

[6-foot weir.]

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
	<i>Feet.</i>	<i>Sec.-ft.</i>		<i>Feet.</i>	<i>Sec.-ft.</i>		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 1.....	0.58	8.7	Oct. 7.....	0.56	8.3	Nov. 3.....	0.50	7.0
4.....	.58	8.7	13.....	.56	8.3	11.....	.54	7.8
10.....	.58	8.7	17.....	.54	7.8	16.....	.63	9.7
29.....	.56	8.2	20.....	.54	7.8	19.....	2.17	60
Sept. 15.....	.58	8.7	24.....	.52	7.4	23.....	2.00	53
29.....	.56	8.2	27.....	.52	7.4			
Oct. 3.....	.56	8.2	31.....	.50	7.0			

Daily gage height, in feet, of North Fork of Puzzle Creek near Hoover, Oreg., for 1909-10.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		0.85	0.86	0.98	0.88	1.12	1.00	0.88	0.88	0.86
2.....		.85	.86	1.22	.88	1.04	1.00	.88	.88	.86
3.....		.85	.86	1.20	.88	.98	.98	.88	.88	.86
4.....		.85	.84	1.20	.88	.98	.98	.86	.88	.86
5.....		.85	.84	1.20	.88	.98	1.00	.86	.88	.86
6.....		.82	.84	1.10	.88	.98	1.02	.86	.88	.86
7.....		.82	.84	1.08	.86	1.04	1.02	.86	.88	.86
8.....		.82	.84	.96	.86	1.12	1.00	.88	.88	.86
9.....		.82	.84	.96	.86	1.20	.98	.88	.88	.84
10.....		.82	.84	.96	.94	1.28	1.06	.88	.88	.84
11.....		.82	.82	.96	.98	1.34	1.14	.88	.88	.84
12.....		.82	.82	.96	.98	1.28	1.08	.88	.88	.84
13.....		.82	.82	.94	.96	1.20	.94	.88	.88	.84
14.....		.82	.82	.98	.96	1.12	.92	.88	.88	.84
15.....		.82	.82	1.12	.96	1.06	.92	.88	.88	.84
16.....		.80	.82	1.10	.96	1.04	.92	.88	.88	.84
17.....		.80	.82	1.10	.96	1.00	.90	.88	.86	.84
18.....		.80	.82	1.08	.96	.98	.90	.88	.86	.84
19.....		.80	.82	1.06	1.12	.98	.90	.88	.86	.84
20.....		.80	.82	1.08	1.12	1.04	.90	.88	.86	.84
21.....		.80	.82	1.08	1.00	1.10	.90	.88	.86	.84
22.....		.88	.82	1.08	.98	1.14	.92	.88	.86	.84
23.....		.98	.82	1.08	1.18	1.20	.94	.88	.86	.84
24.....		.98	.86	1.04	1.28	1.24	.94	.88	.86	.84
25.....		.96	.86	1.04	1.32	1.18	.90	.88	.86	.84
26.....		.90	.86	.98	1.32	1.18	.90	.88	.86	.84
27.....		.90	.86	.90	1.32	1.10	.90	.88	.86	.82
28.....		.90	.98	.88	1.28	.98	.90	.88	.86	.82
29.....		.86	.....	.88	1.22	.96	.90	.88	.86	.82
30.....		.86	.....	.88	1.18	1.00	.88	.88	.86	.82
31.....	0.85	.86	.....	.88	.....	1.00	.....	.88	.86	.....

Daily discharge, in second-feet, of North Fork of Puzzle Creek near Hoover, Oreg., for 1909-10.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		8.5	8.8	13	9.4	20	14	9.4	9.4	8.8
2.....		8.5	8.8	25	9.4	16	14	9.4	9.4	8.8
3.....		8.5	8.8	24	9.4	13	13	9.4	9.4	8.8
4.....		8.5	8.2	24	9.4	13	13	8.8	9.4	8.8
5.....		8.5	8.2	24	9.4	13	14	8.8	9.4	8.8
6.....		7.6	8.2	18	9.4	13	15	8.8	9.4	8.8
7.....		7.6	8.2	17	8.8	16	15	8.8	9.4	8.8
8.....		7.6	8.2	12	8.8	20	14	9.4	9.4	8.8
9.....		7.6	8.2	12	8.8	24	13	9.4	9.4	8.2
10.....		7.6	8.2	12	11	29	17	9.4	9.4	8.2
11.....		7.6	7.6	12	13	33	21	9.4	9.4	8.2
12.....		7.6	7.6	12	13	29	17	9.4	9.4	8.2
13.....		7.6	7.6	11	12	24	11	9.4	9.4	8.2
14.....		7.6	7.6	13	12	20	11	9.4	9.4	8.2
15.....		7.6	7.6	20	12	17	11	9.4	9.4	8.2
16.....		7.0	7.6	18	12	16	11	9.4	9.4	8.2
17.....		7.0	7.6	18	12	14	10	9.4	8.8	8.2
18.....		7.0	7.6	17	12	13	10	9.4	8.8	8.2
19.....		7.0	7.6	17	20	13	10	9.4	8.8	8.2
20.....		7.0	7.6	17	20	16	10	9.4	8.8	8.2
21.....		7.0	7.6	17	14	18	10	9.4	8.8	8.2
22.....		9.4	7.6	17	13	21	11	9.4	8.8	8.2
23.....		13	7.6	17	23	24	11	9.4	8.8	8.2
24.....		13	8.8	16	29	26	11	9.4	8.8	8.2
25.....		12	8.8	16	31	23	10	9.4	8.8	8.2
26.....		10	8.8	13	31	23	10	9.4	8.8	8.2
27.....		10	8.8	10	31	18	10	9.4	8.8	7.6
28.....		10	13	9.4	29	13	10	9.4	8.8	7.6
29.....		8.8	.....	9.4	25	12	10	9.4	8.8	7.6
30.....		8.8	.....	9.4	23	14	9.4	9.4	8.8	7.6
31.....	8.5	8.8	.....	9.4	.....	14	.....	9.4	8.8	.....

NOTE.—Daily discharge determined from fairly well defined rating curve.

Monthly discharge of North Fork of Puzzle Creek near Hoover, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
August.....	8.7	8.2	8.6	529	B.
September.....	8.7	8.2	8.4	500	B.
1909-10.					
October.....	8.3	7.0	7.8	480	B.
November.....	.....	7.0	^a 25.0	1,490	D.
December.....	.....	8.5	^a 10.0	615	D.
January.....	13	7.0	8.53	524	B.
February.....	13	7.6	8.24	458	B.
March.....	25	9.4	15.5	953	B.
April.....	31	8.8	16.0	952	B.
May.....	33	12	18.6	1,140	B.
June.....	21	9.4	12.2	726	B.
July.....	9.4	8.8	9.32	573	B.
August.....	9.4	8.8	9.11	560	B.
September.....	8.8	7.6	8.28	493	B.
The year.....	.....	7.0	12.4	8,960	.....

^a Estimated.

SOUTH FORK OF PUZZLE CREEK NEAR HOOVER, OREG.

Location.—In the SE. $\frac{1}{4}$ sec. 29, T. 11 S., R. 8 E., half a mile above the junction of the North and South Forks and about 26 miles above Hoover.

Records available.—August 1, 1909, to September 30, 1910; fragmentary.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Rocky; control is remains of an old weir; somewhat shifting; 6-foot rectangular weir until flood of November, 1909, when it was badly damaged.

Discharge measurements.—Made by wading near gage.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Observed discharges of South Fork of Puzzle Creek near Hoover, Oreg., in 1909.

[6-foot weir.]

Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.	Date.	Gage height.	Dis-charge.
	<i>Feet.</i>	<i>Sec.-ft.</i>		<i>Feet.</i>	<i>Sec.-ft.</i>		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 1.....	1.12	22.9	Oct. 7.....	0.88	15.8	Nov. 3.....	0.75	12.6
4.....	1.14	23.5	13.....	.88	15.8	11.....	.83	14.7
10.....	1.14	23.5	17.....	.92	17.0	16.....	1.00	19.3
Sept. 15.....	1.08	21.7	20.....	.87	15.8	19.....	2.00	52.0
29.....	1.08	21.7	24.....	.83	14.7	23.....	1.67	41.0
Oct. 3.....	.92	17.0	27.....	.75	12.6			
	.92	17.0	31.....	.75	12.6			

Daily gage height, in feet, of South Fork of Puzzle Creek near Hoover, Oreg., for 1909-10.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		0.92	0.92	0.96	0.90	0.96	1.14	1.14	1.12	1.02
2.....		.92	.92	1.40	.90	.94	1.14	1.14	1.12	1.00
3.....		.92	.90	1.22	.90	.96	1.14	1.12	1.10	1.00
4.....		.92	.90	1.10	.90	.96	1.12	1.10	1.10	1.00
5.....		.92	.88	.92	.90	.96	1.16	1.08	1.10	1.00
6.....		.92	.88	.92	.90	.98	1.18	1.08	1.10	1.00
7.....		.92	.86	.92	.88	1.02	1.16	1.12	1.10	.98
8.....		.92	.84	.86	.88	1.04	1.14	1.16	1.08	.98
9.....		.92	.84	.82	.88	1.08	1.12	1.14	1.08	.98
10.....		.92	.84	.82	.90	1.12	1.14	1.14	1.08	.98
11.....		.92	.84	.82	.90	1.16	1.20	1.16	1.08	.98
12.....		.92	.84	.84	.90	1.12	1.16	1.18	1.08	.98
13.....		.92	.84	.82	.86	1.08	1.12	1.20	1.08	.96
14.....		.92	.84	.82	.86	1.06	1.14	1.20	1.08	.96
15.....		.92	.84	.94	.86	1.02	1.16	1.18	1.08	.96
16.....		.92	.84	.94	.86	1.00	1.16	1.18	1.08	.96
17.....		.92	.84	.94	.86	.98	1.16	1.16	1.06	.96
18.....		.92	.84	.94	.86	.96	1.16	1.16	1.06	.96
19.....		.92	.82	.94	.96	.96	1.20	1.16	1.06	.96
20.....		.92	.82	.94	.96	.98	1.22	1.14	1.04	.96
21.....		.92	.82	.94	.92	1.06	1.20	1.14	1.04	.96
22.....		.96	.82	.94	.90	1.10	1.20	1.14	1.04	.96
23.....		1.00	.82	.94	1.02	1.18	1.18	1.14	1.02	.96
24.....		.98	.86	.92	1.04	1.18	1.18	1.14	1.02	.96
25.....		.96	.86	.92	1.04	1.14	1.18	1.12	1.02	.94
26.....		.94	.86	.92	1.04	1.14	1.16	1.12	1.02	.94
27.....		.92	.86	.92	1.00	1.12	1.18	1.12	1.02	.94
28.....		.92	.96	.90	.98	1.10	1.18	1.12	1.02	.92
29.....		.92		.90	.96	1.14	1.16	1.12	1.02	.92
30.....		.92		.90	.94	1.14	1.16	1.12	1.02	.92
31.....	0.92	.92		.90		1.14		1.12	1.02	

Daily discharge, in second-feet, of South Fork of Puzzle Creek near Hoover, Oreg., for 1909-10.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....		16	16	19	15	19	31	31	30	22
2.....		16	16	55	15	17	31	30	30	21
3.....		16	15	38	15	19	31	30	28	21
4.....		16	15	28	15	19	30	28	28	21
5.....		16	14	16	15	19	33	27	28	21
6.....		16	14	16	15	20	34	27	28	21
7.....		16	13	16	14	22	33	30	28	20
8.....		16	13	13	14	24	31	33	27	20
9.....		16	13	12	14	27	30	31	27	20
10.....		16	13	12	15	30	31	31	27	20
11.....		16	13	12	15	33	36	33	27	20
12.....		16	13	13	15	30	33	34	27	20
13.....		16	13	12	13	27	30	36	27	19
14.....		16	13	16	13	25	31	36	27	19
15.....		16	13	17	13	22	33	34	27	19
16.....		16	13	17	13	21	33	34	27	19
17.....		16	13	17	13	20	33	33	25	19
18.....		16	13	17	13	19	33	33	25	19
19.....		16	12	17	19	19	36	33	25	19
20.....		16	12	17	19	20	38	31	24	19
21.....		16	12	17	16	25	36	31	24	19
22.....		19	12	17	15	28	36	31	24	19
23.....		21	12	17	22	34	34	31	22	19
24.....		20	13	16	24	34	34	31	22	19
25.....		19	13	16	24	31	34	30	22	17
26.....		17	13	16	24	31	33	30	22	17
27.....		16	13	16	21	30	34	30	22	17
28.....		16	19	15	20	28	34	30	22	16
29.....		16	.....	15	19	31	33	30	22	16
30.....		16	.....	15	17	31	33	30	22	16
31.....	16	16	.....	15	.....	31	.....	30	22	.....

NOTE.—Daily discharge determined from fairly well defined rating curve.

Monthly discharge of South Fork of Puzzle Creek near Hoover, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
August.....	23.5	21.7	23.0	1,410	B.
September.....	21.7	17.0	20.3	1,210	B.
1909-10.					
October.....	17.0	12.6	14.5	892	B.
November.....	.....	12.6	^a 30.0	1,790	D.
December.....	.....	16.0	^a 20.0	1,230	D.
January.....	21.0	16.0	16.5	1,010	B.
February.....	19.0	12.0	13.5	750	B.
March.....	55.0	12.0	17.9	1,100	B.
April.....	24.0	13.0	16.5	982	B.
May.....	34.0	17.0	25.4	1,560	B.
June.....	38.0	20.0	33.1	1,970	B.
July.....	36.0	27.0	31.3	1,920	B.
August.....	30.0	22.0	25.4	1,560	B.
September.....	22.0	16.0	19.1	1,140	B.
The year.....	.....	12.0	22.0	15,900	.....

^a Estimated.

PERMELIA CREEK NEAR DETROIT, OREG.

Location.—In sec. 33, T. 10 S., R. 7 E., at Minto trail crossing, half a mile above the mouth of the stream, about 12 miles southeast of Detroit.

Records available.—February 5 to November 13, 1907; January 27 to November 24, 1909; fragmentary.

Drainage area.—Not measured.

Gage.—Gage heights obtained by measuring down from a reference point.

Channel.—Gravel and sand.

Discharge measurements.—Made by wading.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Discharge measurements of Permelia Creek near Detroit, Oreg., in 1906-7.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1906. Sept. 6	J. C. Stevens.....	<i>Fect.</i> 4.80	<i>Sec.-ft.</i> 80	1907. July 26	H. D. McGlashan.....	<i>Fect.</i> 5.05	<i>Sec.-ft.</i> 127

Daily gage height, in feet, and discharge, in second-feet, of Permelia Creek near Detroit, Oreg., for 1907 and 1909.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
1907.			1907.			1909.		
Feb. 5.....	7.58	787	June 20.....	5.1	132	Mar. 27.....	5.25	159
23.....	5.42	190	July 2.....	5.21	152	Apr. 1.....	5.33	173
26.....	5.38	182	5.....	5.21	152	26.....	5.25	159
Mar. 5.....	5.12	136	Aug. 16.....	6.19	358	May 1.....	5.17	145
8.....	5.1	132	9.....	5.0	114	2.....	5.25	159
15.....	5.04	121	11.....	5.0	114	4.....	5.17	145
18.....	5.12	136	Sept. 18.....	4.89	94	8.....	5.33	173
30.....	5.66	236	Oct. 3.....	4.92	100	10.....	5.25	159
Apr. 12.....	5.62	228	6.....	4.89	94	31.....	5.33	173
15.....	5.54	212	22.....	4.83	85	June 9.....	5.25	159
24.....	5.41	188	24.....	4.83	85	15.....	5.25	159
26.....	5.33	173	Nov. 11.....	4.83	85	30.....	5.17	145
May 11.....	5.33	173	13.....	4.83	85	July 16.....	5.16	143
13.....	5.21	152	1909.			Oct. 9.....	4.75	72
24.....	5.3	168	Jan. 27.....	5.25	159	22.....	4.92	100
26.....	5.18	147	30.....	5.25	159	Nov. 8.....	5.0	114
June 4.....	5.25	159	Feb. 24.....	5.33	173	24.....	7.75	855
6.....	5.25	159	27.....	5.33	173			
17.....	5.1	132						

NOTE.—Daily discharge determined from a rating curve fairly well defined between 80 and 130 second-feet.

WHITEWATER CREEK NEAR DETROIT, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 21, T. 10 S., R. 7 E., one-half mile above mouth of stream.

Records available.—March 5 to November 13, 1907; one measurement in 1906.

Drainage area.—Not measured.

Gage.—Gage heights obtained by measuring down from a reference point.

Channel.—Sand and gravel.

Discharge measurements.—Made by wading.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Discharge measurements of Whitewater Creek near Detroit, Oreg., in 1906-7.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1906. Sept. 6	J. C. Stevens.....	<i>Feet.</i> 5.51	<i>Sec.-ft.</i> 65	1907. July 26	H. D. McGlashan.....	<i>Feet.</i> 6.63	<i>Sec.-ft.</i> 69

Daily gage height, in feet, of Whitewater Creek near Detroit, Oreg., for 1907.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....												
2.....							6.80					
3.....										6.51		
4.....						6.80						
5.....			6.77									
6.....						6.70	6.60			6.43		
7.....												
8.....			7.17									
9.....								6.68				
10.....												
11.....					7.37			6.68			6.48	
12.....				7.08								
13.....					6.87						6.48	
14.....												
15.....			6.69									
16.....							6.68					
17.....						6.68						
18.....			6.88						6.50			
19.....												
20.....						6.85						
21.....												
22.....										6.39		
23.....												
24.....				6.95	6.80					6.39		
25.....												
26.....			6.70		6.80							
27.....												
28.....												
29.....												
30.....			6.91									
31.....												

SOUTH FORK OF SANTIAM RIVER NEAR CASCADIA, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 34, T. 13 S., R. 3 E., at the Cascadia ranger station, 3 miles above Cascadia, and about 12 miles above the junction of South and Middle forks.

Records available.—August 3 to September 30, 1910; fragmentary.

Drainage area.—Not measured.

Gage.—Vertical staff on left bank.

Channel.—Gravel and small boulders; practically permanent.

Discharge measurements.—Made from cable near gage.

The following discharge measurement was made by B. F. Heintzleman:

August 3, 1910: Gage height, 1.63 feet; discharge, 32.7 second-feet.

Daily gage height, in feet, of South Fork of Santiam River near Cascadia, Oreg., for 1910: August 3, 1.63 feet; September 1, 1.65 feet; September 25, 1.62 feet.

SOUTH FORK OF SANTIAM RIVER AT WATERLOO, OREG.

Location.—In sec. 29, T. 12 S., R. 1 W., half a mile below highway bridge at Waterloo, 4 miles above Hamilton Creek, 6 miles above Lebanon, and about 20 miles above the mouth.

Records available.—July 28, 1905, to March 31, 1907.

Drainage area.—640 square miles.

Gage.—Staff in two sections, the lower section inclined and the upper vertical.

Channel.—Gravel and small boulders; shifts in floods.

Discharge measurements.—Made from cable or by wading.

Accuracy.—Results good for low water; approximate for high stages.

Discharge measurements of South Fork of Santiam River at Waterloo, Oreg., in 1905-6.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 28	L. R. Allen.....	1.06	375	Mar. 27	L. R. Allen.....	2.85	2,390
				May 8	.....do.....	2.30	1,560
1906.				May 14	.....do.....	2.28	1,550
Jan. 5	L. R. Allen.....	3.49	3,550	Aug. 20	.....do.....	.93	263
Feb. 6	.....do.....	3.36	3,410	Sept. 26	I. E. Oakes.....	1.40	555

Daily gage height, in feet, of South Fork of Santiam River at Waterloo, Oreg., for 1905-1907.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1905.				1905.				1905.			
1.....		1.05	0.8	11.....		1.0	0.6	21.....		1.0	0.8
2.....		1.0	.8	12.....		1.0	.7	22.....		.9	.8
3.....		1.0	.8	13.....		1.0	.7	23.....		.9	.8
4.....		1.0	.7	14.....		1.0	.9	24.....		.9	.8
5.....		1.0	.7	15.....		1.0	.8	25.....		.9	.8
6.....		1.0	.7	16.....		1.0	.8	26.....		.8	1.0
7.....		1.0	.7	17.....		1.0	.9	27.....		.8	1.9
8.....		1.0	.6	18.....		1.0	.9	28.....		.8	1.8
9.....		1.0	.6	19.....		1.0	.9	29.....	1.05	.8	1.8
10.....		1.0	.6	20.....		1.0	.9	30.....	1.05	.8	1.5
								31.....	1.05	.8	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1.9	2.1	3.4	3.7	4.6	4.6	4.4	3.1	3.2	2.2	1.2	0.7
2.....	1.5	2.0	3.9	3.2	4.4	4.2	3.7	2.4	3.0	2.1	1.2	.7
3.....	1.6	2.2	4.2	3.3	4.3	3.9	3.5	2.7	2.9	2.0	1.2	.7
4.....	4.5	1.9	4.2	3.2	3.9	3.9	3.3	2.7	3.5	1.8	1.1	.7
5.....	3.0	1.9	3.2	3.4	3.6	3.9	3.2	2.5	3.2	1.7	1.1	.7
6.....	3.1	1.9	3.9	3.5	3.4	4.0	3.1	2.4	3.6	1.8	1.1	.7
7.....	3.5	1.7	4.5	3.7	3.1	4.6	3.2	2.4	3.8	1.8	1.1	.7
8.....	4.4	1.6	4.9	3.6	3.1	4.4	3.1	2.3	4.3	1.7	1.1	.7
9.....	3.6	1.6	4.9	4.2	3.0	4.5	3.5	2.3	4.0	1.7	1.0	.7
10.....	3.0	1.5	4.5	4.0	2.9	4.2	3.2	2.3	3.4	1.6	1.0	.7
11.....	2.6	1.5	3.2	4.1	2.7	3.8	3.0	2.2	3.9	1.6	1.0	.7
12.....	2.3	1.5	3.0	4.3	2.6	3.5	2.8	2.2	3.3	1.6	1.0	.7
13.....	2.2	1.4	3.0	5.0	2.6	3.3	2.7	2.1	3.3	1.6	1.0	.7
14.....	2.0	1.4	2.7	4.4	2.6	3.2	2.6	2.3	3.1	1.5	1.0	1.8
15.....	2.4	1.4	2.7	4.3	3.0	2.9	2.6	2.6	3.1	1.5	1.0	1.9
16.....	3.9	1.4	2.7	4.6	3.0	2.7	2.7	2.8	3.7	1.5	1.0	1.7
17.....	2.9	1.4	4.0	5.4	3.4	2.7	2.6	2.6	3.7	1.5	1.0	1.7
18.....	3.3	1.8	3.7	5.0	3.8	2.6	2.5	2.6	3.2	1.5	1.0	1.7
19.....	2.4	2.0	3.8	4.4	5.9	2.6	2.5	2.8	3.0	1.4	1.0	1.4
20.....	2.5	3.2	4.0	3.9	7.0	2.5	2.5	2.7	2.7	1.4	.9	1.3
21.....	2.3	2.2	3.6	3.5	6.9	2.6	2.7	3.2	2.7	1.3	.8	1.2
22.....	2.2	2.3	3.3	4.4	5.9	2.6	2.6	3.4	2.6	1.3	.8	1.2
23.....	2.2	2.1	3.1	4.8	5.9	2.5	2.6	3.2	2.5	1.3	.8	1.2
24.....	2.0	2.0	2.7	7.1	5.9	2.6	2.6	3.0	2.4	1.3	.8	1.3
25.....	2.3	1.9	2.7	6.1	5.6	2.6	2.8	2.9	2.2	1.3	.8	1.3
26.....	3.9	2.0	3.5	5.5	5.3	2.8	3.8	2.4	2.2	1.2	.7	1.3
27.....	2.8	3.1	4.4	4.9	6.2	2.9	3.5	3.0	2.3	1.2	.7	1.0
28.....	2.3	2.8	4.2	4.5	5.1	2.8	3.7	2.9	2.3	1.2	.7	1.0
29.....	2.5	2.6	3.7	4.3	.....	2.9	3.5	3.7	2.4	1.2	.7	1.1
30.....	2.3	3.4	4.0	4.5	.....	2.8	3.2	3.8	2.4	1.2	.7	1.1
31.....	2.3	.....	4.2	4.8	.....	4.5	.....	3.6	.....	1.2	.7	.....

Daily gage height, in feet, of South Fork of Santiam River at Waterloo, Oreg., for 1905-1907—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.
1906-7.						1906-7.					
1.....	1.2	2.9	2.5	3.5	8.5	16.....	1.5	8.5	4.0	3.1	.....
2.....	1.1	2.9	2.5	4.0	7.3	17.....	4.4	8.5	3.6	2.5	.....
3.....	1.5	2.9	2.4	4.0	11.5	18.....	4.0	8.2	4.5	2.5	.....
4.....	2.0	2.5	2.4	10.4	12.5	19.....	4.7	8.1	7.7	2.5	.....
5.....	1.6	2.3	2.5	6.4	14.7	20.....	4.8	5.2	7.8	2.6	.....
6.....	1.5	2.3	2.6	6.4	16.8	21.....	2.3	5.1	6.5	2.5	.....
7.....	1.3	7.4	3.5	6.5	14.9	22.....	2.3	4.8	5.0	2.4	.....
8.....	1.2	11.2	4.0	5.0	12.9	23.....	2.1	4.2	4.85	2.4	.....
9.....	1.1	6.6	3.7	4.5	.....	24.....	2.1	4.8	4.8	2.7	.....
10.....	1.1	5.3	3.6	3.9	.....	25.....	2.3	3.5	5.6	2.7	.....
11.....	1.0	5.6	3.6	3.6	.....	26.....	2.4	3.3	5.9	2.9	.....
12.....	1.3	7.5	3.5	3.4	.....	27.....	2.9	3.4	4.8	3.5	.....
13.....	1.5	10.0	3.7	3.2	.....	28.....	2.5	3.0	4.4	9.1	.....
14.....	1.3	13.5	3.3	3.2	.....	29.....	2.2	2.7	4.0	10.4	.....
15.....	1.4	10.0	4.1	3.0	.....	30.....	2.1	2.7	3.1	8.4	.....
						31.....	2.3	.....	3.8	8.9	.....

Daily discharge, in second-feet, of South Fork of Santiam River at Waterloo, Oreg., for 1905-1907.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1905.				1905.				1905.			
1.....		345	230	11.....		320	154	21.....		320	230
2.....		320	230	12.....		320	192	22.....		273	230
3.....		320	230	13.....		320	192	23.....		273	230
4.....		320	192	14.....		320	273	24.....		273	230
5.....		320	192	15.....		320	230	25.....		273	230
6.....		320	192	16.....		320	230	26.....		230	320
7.....		320	192	17.....		320	27	27.....		230	1,070
8.....		320	158	18.....		320	273	28.....		230	960
9.....		320	158	19.....		320	273	29.....	345	230	960
10.....		320	158	20.....		320	273	30.....	345	230	660
								31.....	345	230	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1,070	1,320	3,440	4,070	6,310	6,310	5,780	2,860	3,050	1,450	430	192
2.....	660	1,190	4,520	3,050	5,780	5,260	4,070	1,730	2,680	1,320	430	192
3.....	750	1,450	5,260	3,240	5,520	4,520	3,640	2,180	2,510	1,190	430	192
4.....	6,040	1,070	5,260	3,050	4,520	4,520	3,240	2,180	3,640	960	370	192
5.....	2,680	1,070	3,050	3,440	3,850	4,520	3,050	1,870	3,050	850	370	192
6.....	2,860	1,070	4,520	3,640	3,440	4,760	2,860	1,730	3,850	960	370	192
7.....	3,640	850	6,040	4,070	2,860	6,310	3,050	1,730	4,290	960	370	192
8.....	5,780	750	7,120	3,850	2,860	5,780	2,860	1,590	5,520	850	370	192
9.....	3,850	750	7,120	5,260	2,680	6,040	3,640	1,590	4,760	850	320	192
10.....	2,680	660	6,040	4,760	2,510	5,260	3,050	1,590	3,440	750	320	192
11.....	2,020	660	3,050	5,010	2,180	4,290	2,680	1,450	4,520	750	320	192
12.....	1,590	660	2,680	5,520	2,020	3,640	2,340	1,450	3,240	750	320	192
13.....	1,450	580	2,680	7,400	2,020	3,240	2,180	1,320	3,240	750	320	192
14.....	1,190	580	2,180	5,780	2,020	3,050	2,020	1,590	2,860	660	320	960
15.....	1,730	580	2,180	5,520	2,680	2,510	2,020	2,020	2,860	660	320	1,070
16.....	4,520	580	2,180	6,310	2,680	2,180	2,180	2,340	4,070	660	320	850
17.....	2,510	1,590	3,240	8,580	3,440	2,180	2,020	2,020	4,070	660	320	850
18.....	3,240	960	4,070	7,400	4,290	2,020	1,870	2,020	3,050	660	320	850
19.....	1,730	1,190	4,290	5,780	10,100	2,020	1,870	2,340	2,680	580	320	580
20.....	1,870	3,050	4,760	4,520	13,700	1,870	1,870	2,180	2,180	580	273	500
21.....	1,590	1,450	3,850	3,640	13,400	2,020	2,180	3,050	2,180	500	230	430
22.....	1,450	1,590	3,240	3,440	10,190	2,020	2,020	3,440	2,020	500	230	430
23.....	1,450	1,320	2,860	6,850	10,100	1,870	2,020	3,050	1,870	500	230	430
24.....	1,190	1,190	2,180	14,069	10,100	2,020	2,020	2,680	1,730	500	230	500
25.....	1,590	1,070	2,180	10,800	9,190	2,020	2,340	2,510	1,450	500	230	500
26.....	4,520	1,190	3,640	8,880	8,280	2,340	4,290	1,730	1,450	430	192	500
27.....	2,340	2,860	5,780	7,120	11,100	2,510	3,640	2,680	1,590	430	192	320
28.....	1,590	2,340	5,260	6,040	7,690	2,340	4,070	2,510	1,590	430	192	320
29.....	1,870	2,020	4,070	5,520	.....	2,510	3,640	4,070	1,730	430	192	370
30.....	1,590	3,440	4,760	6,040	.....	2,340	3,050	4,290	1,730	430	192	370
31.....	1,590	.....	5,260	6,850	.....	6,040	.....	3,850	.....	430	192	.....

Daily discharge, in second-feet, of South Fork of Santiam River at Waterloo, Oreg., for 1905-1907—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.
1906-7.						1906-7.					
1.....	430	2,510	1,870	3,640	18,700	16.....	660	18,700	4,760	2,860	-----
2.....	370	2,510	1,870	4,760	14,700	17.....	5,780	18,700	3,850	1,870	-----
3.....	660	2,510	1,730	4,760	29,400	18.....	4,760	17,700	6,040	1,870	-----
4.....	1,190	1,870	1,730	25,300	33,100	19.....	6,580	17,300	16,000	1,870	-----
5.....	750	1,590	1,870	11,700	41,500	20.....	6,850	7,980	16,300	2,020	-----
6.....	660	1,590	2,020	11,700	50,000	21.....	1,590	7,690	12,000	1,870	-----
7.....	500	15,000	3,640	12,000	42,300	22.....	1,590	6,850	7,400	1,730	-----
8.....	430	28,200	4,760	7,400	34,600	23.....	1,320	5,260	6,980	1,730	-----
9.....	370	12,400	4,070	6,040	-----	24.....	1,320	6,850	6,850	2,180	-----
10.....	370	8,280	3,850	4,520	-----	25.....	1,590	3,640	9,190	2,180	-----
11.....	320	9,190	3,850	3,850	-----	26.....	1,730	3,240	10,100	2,510	-----
12.....	500	15,400	3,640	3,440	-----	27.....	2,510	3,440	6,850	3,640	-----
13.....	660	23,900	4,070	3,050	-----	28.....	1,870	2,680	5,780	20,800	-----
14.....	500	36,900	3,240	3,050	-----	29.....	1,450	2,180	4,760	25,300	-----
15.....	580	23,900	5,010	2,680	-----	30.....	1,320	2,180	2,860	18,400	-----
						31.....	1,590	-----	4,290	20,100	-----

NOTE.—Daily discharge determined from a rating curve well defined between 250 and 5,000 second-feet. Discharge estimates Feb. 9 to Mar. 31, 1907, published in Water-Supply Paper 252, p. 373, discarded; probably much too large owing either to erroneous gage reading or to obstruction in channel.

Monthly discharge of South Fork of Santiam River at Waterloo, Oreg., for 1905-1907.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
August.....	345	230	297	18,300	B.
September.....	1,070	158	314	18,700	B.
1905-6.					
October.....	6,040	660	2,340	144,000	A.
November.....	3,440	580	1,270	75,600	A.
December.....	7,120	2,180	4,140	255,000	A.
January.....	14,000	3,050	5,790	356,000	B.
February.....	13,700	2,020	5,910	328,000	B.
March.....	6,310	1,870	3,490	215,000	A.
April.....	5,780	1,870	2,850	170,000	A.
May.....	4,290	1,320	2,310	142,000	A.
June.....	5,520	1,450	2,900	173,000	A.
July.....	1,450	430	707	43,500	A.
August.....	430	192	298	18,300	B.
September.....	1,070	192	411	24,500	A.
The year.....	14,000	192	2,680	1,940,000	
1906-7.					
October.....	6,850	320	1,640	101,000	A.
November.....	36,900	1,590	10,300	613,000	B.
December.....	16,300	1,730	5,470	336,000	B.
January.....	25,300	1,730	7,060	434,000	B.
February 1-8.....	50,000	14,700	33,000	524,000	C.
The period.....				2,010,000	

LUCKIAMUTE RIVER NEAR SUVER, OREG.

Location.—In sec. 24, T. 9 S., R. 5 W., at Helmick bridge, 3 miles below junction of North and South forks, 4 miles northwest of Suver.

Records available.—August 18, 1905, to September 30, 1910.

Drainage area.—233 square miles.

Gage.—Staff in two sections; lower section inclined, upper vertical.

Channel.—Sandy; shifting; one channel at all stages.

Discharge measurements.—Made from a cable.

Accuracy.—Results good.

Discharge measurements of Luckiamute River near Suver, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Fect.</i>	<i>Sec.-ft.</i>	1907.		<i>Fect.</i>	<i>Sec.-ft.</i>
Aug. 18	L. R. Allen.....	1.47	73	Mar. 3	I. E. Oakes.....	9.30	1,320
Oct. 7	.....do.....	8.57	1,180	July 31	J. C. Stevens.....	1.35	67
				Nov. 26	H. D. McGlashan.....	19.45	4,270
1906.				1908.			
Jan. 10	P. A. Cupper.....	7.60	928	Feb. 10	H. D. McGlashan.....	10.30	1,520
Apr. 5	L. R. Allen.....	5.01	495	Sept. 12	.....do.....	1.40	64
May 16	.....do.....	5.59	592				
June 30	.....do.....	4.28	396	1910.			
				Aug. 3	Henshaw and Davenport.....	1.11	45

Daily gage height, in feet, of Luckiamute River near Suver, Oreg., for 1905-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1905.			1905.			1905.		
1		0.95	11		1.0	21	1.2	1.2
2		.9	12		1.0	22	1.25	1.1
3		.95	13		1.1	23	1.5	1.1
4		1.2	14		1.1	24	1.1	1.1
5		1.0	15		1.5	25	.95	1.15
6		1.5	16		1.0	26	1.0	1.8
7		1.5	17		1.3	27	.95	3.2
8		.95	18		1.1	28	1.5	3.5
9		.95	19		1.25	29	1.1	2.75
10		1.0	20		1.25	30	1.4	2.6
						31	1.0	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	2.5	2.8	6.6	15.6	8.35	15.8	6.8	3.95	4.0	3.8	2.0	1.25
2	2.2	2.55	7.3	12.3	7.5	13.6	5.9	3.85	3.6	3.75	1.85	.85
3	2.5	2.75	7.55	11.25	7.3	12.05	5.3	3.65	4.0	3.5	1.8	.95
4	9.0	2.45	7.15	9.5	7.4	10.8	5.1	4.35	4.4	3.5	1.2	1.25
5	6.2	2.6	6.45	7.75	6.5	9.95	5.0	4.6	4.8	3.25	1.85	1.2
6	7.1	2.4	7.25	8.2	6.2	9.3	5.1	5.25	4.25	3.1	1.85	1.2
7	7.5	2.2	7.30	8.5	5.7	8.55	4.9	5.0	4.9	3.05	1.75	1.2
8	7.7	2.3	7.0	7.8	5.45	8.1	4.8	3.1	5.1	3.05	1.85	1.15
9	6.65	2.05	6.25	9.0	5.3	7.6	5.0	3.2	4.8	2.9	1.8	.95
10	6.35	2.15	6.0	8.3	5.2	7.4	5.8	3.05	4.35	2.85	2.15	1.25
11	4.55	2.15	5.8	9.0	5.1	7.2	5.25	3.0	4.2	2.8	1.8	1.2
12	4.5	2.1	5.1	10.8	4.9	6.75	4.55	2.9	5.1	2.7	1.75	1.35
13	3.6	2.0	5.1	17.15	4.6	6.35	4.75	3.0	5.4	2.65	1.7	2.5
14	3.3	2.05	4.8	17.15	4.5	6.1	4.3	3.2	5.6	2.6	1.75	2.3
15	3.3	2.0	4.35	16.15	4.7	6.85	3.9	3.9	5.3	2.65	1.7	2.55
16	4.15	2.0	4.2	17.6	4.9	5.4	3.83	5.6	8.7	2.25	1.75	2.5
17	3.5	2.0	8.4	20.8	6.4	5.4	3.85	6.7	7.5	2.3	1.65	1.9
18	3.5	2.1	12.0	21.6	12.3	5.3	3.75	4.2	7.2	2.5	1.6	1.75
19	3.4	3.0	10.7	18.6	18.5	5.7	3.8	4.1	6.0	2.35	1.65	1.65
20	3.3	7.75	14.35	16.55	15.5	5.95	3.8	4.25	5.6	2.5	1.45	1.55
21	3.0	5.5	13.15	15.5	23.2	6.5	3.7	4.3	5.1	2.3	1.5	1.45
22	3.0	4.5	11.4	13.2	22.0	6.6	3.6	4.4	4.6	2.2	1.55	1.3
23	2.85	4.15	9.75	16.6	21.5	7.1	3.5	3.4	4.3	2.15	1.5	1.5
24	2.8	3.75	9.2	17.6	22.5	7.3	3.5	3.8	4.25	2.15	1.4	1.65
25	2.95	3.5	8.3	18.0	23.9	7.6	4.2	4.7	4.0	2.0	1.45	2.5
26	3.65	3.2	15.4	14.8	22.9	7.45	4.1	4.9	3.95	2.5	1.45	1.8
27	3.1	3.7	15.2	13.2	22.1	7.1	4.25	5.0	3.8	2.0	1.25	1.4
28	3.35	3.5	13.0	13.5	18.9	6.5	5.25	4.85	3.65	2.3	1.3	1.3
29	2.8	3.6	12.2	10.7		6.8	5.35	4.6	3.9	2.25	1.2	1.7
30	2.8	5.55	12.4	10.4		6.1	4.2	4.45	4.3	2.5	1.15	1.95
31	2.7		18.65	9.0		7.5		4.6		2.35	1.3	

Daily gage height, in feet, of Luckiamute River near Suver, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1.5	3.5	6.9	10.1	22.1	9.0	8.7	4.5	3.2	2.05	1.2	1.05
2.....	1.55	2.6	6.1	10.3	20.3	9.5	7.3	4.4	3.1	1.95	1.25	1.15
3.....	2.45	3.0	7.3	15.5	19.7	10.4	7.4	4.3	3.1	2.05	1.2	1.5
4.....	2.85	4.0	5.9	30.0	23.1	9.0	7.6	4.5	3.1	2.2	1.25	1.3
5.....	1.95	8.2	5.5	26.2	27.6	8.0	7.5	5.9	2.8	2.4	1.15	1.15
6.....	1.6	7.1	5.7	22.3	27.4	7.1	12.1	4.5	2.35	1.9	1.15	1.05
7.....	1.45	10.9	13.0	17.7	24.9	7.0	21.6	3.8	2.55	2.3	1.25	1.1
8.....	1.8	23.1	12.5	14.4	19.1	8.0	23.9	3.6	2.8	1.75	1.2	1.1
9.....	1.9	23.6	11.1	12.9	16.0	6.0	19.4	3.4	2.6	1.7	1.3	1.05
10.....	1.7	17.6	12.8	10.7	14.2	8.0	16.3	3.1	2.8	1.65	1.35	1.1
11.....	1.7	18.8	12.9	9.2	12.6	9.7	15.5	4.0	3.15	1.6	1.25	1.05
12.....	2.5	13.0	10.9	8.5	12.0	8.4	12.3	4.3	2.75	1.65	1.1	.9
13.....	3.9	15.4	10.8	8.5	10.7	8.0	11.1	4.2	3.0	1.6	1.15	.85
14.....	3.2	18.7	10.3	8.5	9.6	7.5	9.0	3.9	3.0	1.55	1.15	.85
15.....	3.3	22.1	12.6	8.0	8.3	8.6	8.6	3.5	2.8	1.5	1.2	1.1
16.....	7.5	25.9	13.0	7.5	8.6	7.4	8.0	3.4	2.3	1.55	1.1	1.1
17.....	8.35	23.0	12.2	7.0	8.0	7.0	7.6	3.4	2.65	1.5	1.05	2.0
18.....	6.5	18.9	11.5	5.9	8.1	11.2	7.8	3.1	2.5	1.45	1.1	2.5
19.....	5.6	15.4	13.1	6.0	8.2	11.8	7.5	3.8	2.6	1.5	1.15	1.85
20.....	4.8	13.0	18.0	6.2	8.5	8.2	7.2	3.6	2.45	1.45	1.1	1.5
21.....	3.45	12.8	22.0	5.8	8.0	7.4	7.0	3.4	2.3	1.45	1.2	1.2
22.....	3.6	12.6	24.5	6.2	5.3	8.0	6.4	3.2	2.25	1.5	1.05	1.0
23.....	3.4	11.0	18.0	6.2	6.2	10.1	6.1	3.7	2.15	1.45	1.0	1.1
24.....	3.1	10.0	14.0	6.4	7.5	11.4	5.8	3.8	2.2	1.4	1.15	1.55
25.....	2.7	9.5	13.6	7.0	8.0	10.0	5.5	3.9	2.25	1.55	1.2	1.1
26.....	3.2	8.3	16.0	6.2	10.4	10.5	5.1	3.9	2.1	1.4	1.2	1.05
27.....	5.4	7.2	13.0	6.8	9.7	9.4	5.0	3.7	2.2	1.4	1.15	1.15
28.....	4.5	7.3	11.9	9.0	8.6	9.2	4.9	3.7	2.0	1.2	1.1	1.1
29.....	4.2	6.4	10.2	16.0	-----	9.6	4.8	3.6	2.15	1.1	1.15	1.2
30.....	4.1	6.5	10.5	13.7	-----	8.9	4.6	3.5	2.1	1.3	1.2	1.15
31.....	4.05	-----	11.4	17.3	-----	8.7	-----	3.3	-----	1.25	1.1	-----
1907-8.												
1.....	1.3	1.45	10.8	17.4	7.0	7.3	7.9	6.8	3.9	2.4	1.4	2.5
2.....	1.6	1.5	9.0	17.4	7.0	7.6	8.0	6.3	3.5	2.4	1.3	2.55
3.....	1.9	3.1	7.2	18.3	7.0	7.8	8.0	8.0	3.4	2.25	1.2	-----
4.....	1.9	2.3	9.8	17.7	7.4	7.2	8.0	7.6	3.4	2.15	1.0	-----
5.....	1.7	1.7	7.4	14.2	10.5	7.0	6.6	7.0	3.7	2.3	1.2	-----
6.....	1.8	1.5	9.7	13.5	18.5	6.8	6.6	6.8	3.8	2.25	1.3	-----
7.....	1.4	1.4	9.8	13.0	20.3	6.3	6.4	6.0	3.5	2.2	1.2	-----
8.....	1.2	1.4	10.4	12.9	14.8	6.0	6.2	5.5	3.3	2.15	1.25	-----
9.....	1.1	1.2	10.5	19.0	13.6	5.5	6.0	5.3	3.05	2.1	1.3	-----
10.....	1.05	1.2	10.8	14.4	10.7	5.6	5.7	5.1	2.8	2.0	1.3	-----
11.....	1.05	1.1	13.7	16.2	9.5	6.2	5.5	5.0	2.7	1.9	1.35	-----
12.....	1.0	1.15	15.4	14.1	9.8	6.5	5.5	4.8	2.6	2.0	1.3	1.4
13.....	1.0	1.25	24.2	12.0	9.1	10.5	5.2	4.6	2.5	2.2	1.35	1.45
14.....	.9	1.4	26.0	13.75	8.5	16.3	4.7	5.0	2.5	2.3	1.3	1.5
15.....	1.0	1.45	20.7	11.0	7.6	20.3	4.5	5.6	2.5	2.2	1.25	1.55
16.....	.95	1.5	15.2	11.0	8.3	27.5	4.4	5.5	2.75	1.95	1.2	1.5
17.....	.95	1.4	11.3	12.7	10.0	23.8	4.9	5.5	2.85	1.9	1.2	1.5
18.....	.95	1.6	11.2	13.5	9.8	18.5	4.5	5.7	2.85	1.85	1.3	1.4
19.....	.9	2.3	10.5	11.3	9.5	14.7	4.5	5.8	2.1	1.8	1.25	1.45
20.....	.9	3.8	14.2	14.7	8.2	12.4	11.0	6.0	3.15	1.8	1.4	1.4
21.....	.95	7.5	14.8	15.7	8.0	11.2	9.0	5.8	3.15	1.8	1.3	1.3
22.....	1.0	4.8	26.4	12.3	7.5	10.0	8.0	5.4	2.9	1.8	1.3	1.25
23.....	1.0	9.5	26.4	12.1	7.0	9.2	7.5	5.0	2.1	1.75	1.2	1.25
24.....	1.0	16.0	23.9	11.0	6.5	8.6	9.0	4.8	2.75	1.7	1.3	1.3
25.....	1.0	23.0	24.0	11.0	6.3	9.5	11.5	4.6	2.68	1.7	1.4	1.35
26.....	1.0	19.4	27.3	10.5	6.9	8.3	9.6	4.5	2.6	1.6	1.35	1.3
27.....	.95	12.5	24.3	10.0	7.5	8.2	8.0	4.3	3.15	1.6	1.4	1.3
28.....	.9	14.0	22.3	9.0	7.3	8.0	7.5	4.3	3.0	1.65	1.65	1.2
29.....	.9	11.7	18.5	8.3	7.2	8.0	7.2	4.1	2.65	1.7	1.8	1.25
30.....	1.45	12.0	16.5	7.0	-----	8.0	7.0	4.0	2.55	1.5	2.2	1.25
31.....	1.3	-----	14.6	7.0	-----	7.5	-----	3.9	-----	1.45	2.3	-----

Daily gage height, in feet, of Luckiamute River near Suver, Oreg., for 1905-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	1.2	7.5	4.8	10.9	8.5	15.3	7.8	3.6	5.2	2.2	1.55	1.4
2	1.15	5.5	4.75	11.5	9.8	15.0	7.3	3.55	5.0	2.26	1.6	1.35
3	1.15	4.15	4.5	13.5	11.9	14.5	6.4	3.5	4.25	2.1	1.55	1.3
4	1.2	3.8	4.2	12.0	13.5	13.9	6.1	3.6	4.0	2.1	1.55	1.3
5	1.25	3.5	4.0	11.5	14.0	12.5	5.7	3.55	3.6	2.4	1.55	1.3
6	1.3	3.3	4.0	10.9	16.5	11.0	5.4	3.4	3.3	2.9	1.5	1.3
7	1.35	3.1	4.1	10.6	14.9	10.5	5.1	3.2	3.3	3.0	1.5	1.3
8	1.4	3.0	4.0	10.5	13.2	10.8	5.0	3.2	3.6	3.2	1.5	1.3
9	1.4	2.9	3.95	9.9	13.0	10.7	4.9	3.25	3.7	3.3	1.5	1.35
10	1.45	2.5	3.9	9.6	14.8	10.9	4.9	3.25	3.8	3.4	1.45	1.35
11	1.3	2.0	4.5	9.0	14.7	10.0	4.7	3.3	3.8	3.0	1.45	1.35
12	1.25	2.5	5.0	8.6	14.0	9.3	4.5	3.3	3.75	2.85	1.4	1.3
13	1.4	2.9	6.0	8.0	14.5	8.6	4.4	3.35	3.7	2.6	1.4	1.3
14	4.0	3.0	7.5	7.5	16.7	8.1	4.2	3.35	3.7	2.15	1.4	1.25
15	6.0	2.6	7.9	11.0	18.3	7.8	4.2	3.4	3.0	2.1	1.4	1.25
16	4.5	2.3	8.0	14.5	19.0	7.6	4.3	3.2	3.5	2.0	1.4	1.2
17	3.0	4.0	8.4	18.5	23.8	7.3	4.25	3.2	2.7	2.0	1.3	1.0
18	2.5	4.7	8.8	24.7	23.0	7.1	4.3	3.3	2.75	1.95	1.35	1.0
19	1.75	4.5	6.0	28.4	23.2	6.7	4.2	3.2	2.8	1.9	1.3	1.0
20	2.0	6.0	5.3	27.5	20.4	6.6	4.15	3.1	2.75	1.85	1.4	1.2
21	2.5	8.8	7.5	27.0	18.1	6.5	4.1	3.0	2.65	1.85	1.45	1.2
22	3.3	13.0	9.8	25.7	17.8	6.3	4.0	2.9	2.6	1.8	1.4	1.2
23	3.0	14.5	11.6	22.5	14.7	6.0	3.95	2.8	2.55	1.8	1.4	1.25
24	2.9	11.7	12.9	18.3	14.3	5.7	3.9	2.8	2.31	1.75	1.4	1.3
25	2.1	10.2	13.7	15.5	17.8	5.5	4.0	2.8	2.31	1.65	1.4	1.3
26	2.2	8.9	14.7	12.5	16.3	5.45	4.2	2.8	2.3	1.6	1.4	1.3
27	2.4	7.5	12.8	11.7	16.7	5.4	4.2	2.9	2.3	1.55	1.4	1.35
28	2.5	6.4	13.5	10.5	15.1	5.5	4.0	2.9	2.3	1.4	1.4	1.5
29	2.7	6.8	14.8	10.0	.....	5.2	3.9	6.5	2.2	1.3	1.4	1.55
30	2.9	5.1	12.5	8.3	.....	5.3	3.85	6.0	2.25	1.35	1.4	1.6
31	8.4	.....	10.0	7.8	.....	7.0	.....	5.45	.....	1.4	1.4	.....
1909-10.												
1	1.85	10.0	21.5	6.5	15.0	25.5	6.45	3.9	2.4	1.85	1.35	.95
2	1.9	12.0	19.0	6.5	13.6	26.25	6.9	4.0	2.5	1.85	1.3	.85
3	1.9	15.6	17.5	6.0	11.5	25.6	7.2	4.1	2.5	1.85	1.25	.85
4	1.85	15.0	15.5	6.4	11.0	24.3	7.05	4.15	2.5	1.75	1.15	.85
5	1.75	14.0	13.6	7.2	10.4	23.0	6.9	3.9	2.35	1.75	1.15	.85
6	1.6	14.5	10.5	7.6	9.5	20.6	6.55	3.85	2.35	1.75	1.15	.85
7	1.55	15.0	13.5	8.35	8.2	19.0	6.3	3.5	2.35	1.7	1.15	.85
8	1.5	15.8	15.0	8.9	7.7	16.2	5.9	3.4	2.2	1.7	1.2	.95
9	1.5	16.0	18.3	9.6	7.65	14.0	10.0	3.35	2.05	1.65	1.15	.95
10	1.45	15.5	20.8	9.0	7.5	11.5	9.95	3.35	2.05	1.55	1.15	.95
11	1.4	15.0	21.0	8.7	7.4	9.7	9.5	3.4	2.05	1.55	1.15	.95
12	1.4	14.0	26.5	8.5	6.9	9.0	8.0	3.3	2.05	1.55	1.2	.95
13	1.4	12.5	22.5	7.9	11.8	8.6	8.7	3.3	2.05	1.5	1.15	.95
14	1.4	10.0	19.6	7.7	14.0	8.55	7.75	3.3	2.05	1.45	1.1	.95
15	1.4	8.0	16.8	6.9	12.5	7.9	7.5	3.3	2.05	1.45	1.1	.95
16	1.4	12.0	14.5	11.0	12.0	7.5	6.8	3.25	2.05	1.45	1.1	.95
17	1.45	13.5	13.0	14.5	11.7	6.9	6.65	3.2	2.05	1.4	1.1	1.45
18	1.0	14.0	10.9	14.4	11.6	6.9	6.5	3.2	2.05	1.4	1.0	1.45
19	2.0	16.0	9.5	14.3	11.0	6.85	6.2	3.1	2.05	1.35	1.0	1.65
20	2.5	24.0	9.0	14.0	13.0	6.75	6.05	2.9	2.05	1.35	1.0	1.8
21	2.5	19.3	8.7	14.7	14.0	6.5	5.9	2.9	1.95	1.25	1.0	1.85
22	2.55	25.7	8.0	20.0	14.9	6.25	5.8	2.9	1.95	1.25	1.05	1.95
23	2.55	28.8	7.8	19.0	16.5	5.9	5.65	2.9	1.95	1.25	1.05	1.95
24	2.55	27.5	7.4	19.4	22.5	5.8	5.2	2.9	1.95	1.35	1.05	1.45
25	2.5	25.4	7.1	18.0	24.0	5.4	4.9	2.8	1.95	1.35	1.05	.95
26	2.0	20.35	7.0	17.8	22.5	5.35	4.4	2.75	1.95	1.35	1.05	1.15
27	2.0	14.4	6.5	17.0	24.0	5.2	4.15	2.7	1.85	1.35	1.05	1.15
28	2.5	19.8	6.0	16.0	25.7	4.9	4.1	2.65	1.85	1.35	.95	1.15
29	2.5	20.3	6.1	16.3	.....	4.65	3.9	2.5	1.85	1.35	.95	1.15
30	2.55	25.5	6.3	16.5	.....	4.4	3.9	2.5	1.85	1.35	.95	1.15
31	6.0	.....	6.5	16.0	.....	4.15	.....	2.5	.....	1.35	.95	.....

Daily discharge, in second-feet, of Luckiamute River near Suver, Oreg., for 1905-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1905.			1905.			1905.		
1		41	11		44	21	56	56
2		39	12		44	22	59	50
3		41	13		50	23	76	50
4		56	14		50	24	50	50
5		44	15		76	25	41	53
6		76	16		44	26	44	99
7		76	17		62	27	41	242
8		41	18		50	28	76	280
9		41	19		59	29	50	190
10		44	20	59	76	30	69	173
						31	44	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	163	195	774	3,260	1,140	3,330	812	340	347	319	115	59
2	133	168	910	2,180	951	2,590	648	326	293	312	103	37
3	163	190	962	1,880	910	2,110	546	299	347	280	99	41
4	1,290	158	880	1,410	930	1,760	514	397	405	280	56	59
5	701	173	746	1,000	755	1,530	498	435	466	248	103	56
6	870	153	900	1,100	701	1,360	514	538	382	230	103	56
7	951	133	910	1,170	614	1,180	482	498	482	224	95	56
8	993	143	850	1,010	571	1,080	466	230	514	224	103	53
9	784	120	710	1,290	546	972	498	242	466	206	99	41
10	728	128	665	1,120	530	930	631	224	397	200	128	59
11	428	128	631	1,290	514	890	538	218	375	195	99	56
12	420	124	514	1,760	482	802	397	206	514	184	95	65
13	293	115	514	3,830	435	728	458	218	563	178	91	163
14	254	120	466	3,830	420	683	390	242	597	173	95	143
15	254	115	398	3,460	450	821	333	333	546	178	91	168
16	368	115	375	4,000	482	563	323	597	1,220	138	95	163
17	280	115	1,150	5,280	737	563	326	793	951	143	87	107
18	280	124	2,100	5,610	2,180	546	312	375	890	163	83	95
19	267	218	1,730	4,380	4,340	614	319	361	665	148	87	87
20	254	1,000	2,830	3,600	3,220	656	319	382	597	163	72	79
21	218	580	2,450	3,220	6,290	755	306	390	514	143	76	72
22	218	420	1,920	2,460	5,780	774	293	405	435	133	79	62
23	200	368	1,480	3,620	5,570	870	280	267	390	128	76	76
24	195	312	1,340	5,610	5,990	910	280	319	382	128	69	87
25	212	280	1,120	4,150	6,590	972	375	450	347	115	72	163
26	300	242	3,190	2,980	6,160	940	361	482	340	163	72	99
27	230	306	3,120	2,460	5,820	870	382	498	319	115	59	69
28	260	280	2,400	2,560	4,500	755	538	474	300	143	62	62
29	195	293	2,160	1,730	.....	812	554	435	333	138	56	91
30	195	582	2,220	1,650	.....	683	375	412	390	163	53	111
31	184	.....	4,400	1,290	.....	951	.....	435	.....	148	62	.....

Daily discharge, in second-feet, of Luckiamute River near Suver, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	76	280	831	1,460	5,360	1,220	1,160	411	242	120	56	47
2.....	80	173	683	1,510	4,610	1,330	880	397	230	111	59	53
3.....	158	218	910	2,930	4,380	1,540	900	384	230	120	56	76
4.....	200	347	648	9,450	5,820	1,220	940	411	230	133	59	62
5.....	211	1,100	580	7,360	8,100	1,020	920	628	195	153	53	53
6.....	83	870	614	5,460	8,000	840	1,960	411	148	107	53	47
7.....	72	1,780	2,400	3,650	6,690	820	5,150	319	168	143	59	50
8.....	99	6,240	2,240	2,600	4,150	1,020	6,190	293	195	95	56	50
9.....	107	6,460	1,840	2,170	3,080	645	4,260	267	173	91	62	47
10.....	91	4,000	2,340	1,610	2,540	1,020	3,180	230	195	87	66	50
11.....	91	4,460	2,370	1,270	2,090	1,380	2,930	345	236	83	59	47
12.....	163	2,400	1,780	1,120	1,930	1,100	2,010	384	190	87	50	39
13.....	333	3,190	1,760	1,120	1,610	1,020	1,700	371	218	83	53	36
14.....	242	4,420	1,620	1,120	1,350	920	1,220	232	218	80	53	36
15.....	254	5,820	2,280	1,020	1,180	1,140	1,140	280	195	76	56	50
16.....	951	7,450	2,400	920	1,140	900	1,020	267	143	80	50	50
17.....	1,140	6,240	2,160	820	1,020	820	940	267	178	76	47	115
18.....	755	4,500	1,950	628	1,040	1,730	980	230	163	72	50	163
19.....	597	3,190	2,430	645	1,060	1,880	920	319	173	76	53	103
20.....	466	2,400	4,150	680	1,120	1,060	860	293	158	72	50	76
21.....	274	2,340	5,780	610	1,020	900	820	267	143	72	56	56
22.....	293	2,280	6,840	680	530	1,020	715	242	138	76	47	44
23.....	267	1,810	4,150	680	680	1,460	662	306	128	72	44	50
24.....	230	1,540	2,720	715	920	1,780	610	319	133	69	53	80
25.....	184	1,420	2,590	820	1,020	1,440	560	332	138	80	56	50
26.....	242	1,120	3,400	680	1,540	1,560	500	332	124	69	56	47
27.....	563	890	2,400	785	1,380	1,310	485	306	133	69	53	53
28.....	420	910	2,070	1,220	1,140	1,270	470	306	115	56	50	50
29.....	375	737	1,600	3,080	.....	1,350	455	293	128	50	53	56
30.....	361	755	1,680	2,390	.....	1,200	425	280	124	62	56	53
31.....	354	.....	1,920	3,510	.....	1,160	.....	254	.....	59	50	.....
1907-8.												
1.....	62	72	1,630	3,550	820	880	1,000	785	332	153	69	163
2.....	83	76	1,220	3,550	820	940	1,020	698	280	153	62	168
3.....	107	230	860	3,860	820	980	1,020	1,020	267	138	56	158
4.....	107	143	1,400	3,650	900	860	1,020	940	267	128	44	148
5.....	91	91	900	2,540	1,560	820	750	820	306	143	56	138
6.....	99	76	1,380	2,340	3,930	785	750	785	319	138	62	128
7.....	69	69	1,400	2,200	4,610	698	715	645	280	133	56	118
8.....	56	69	1,540	2,170	2,720	645	680	560	254	128	59	108
9.....	50	56	1,560	4,110	2,360	560	645	530	224	124	62	99
10.....	47	56	1,630	2,600	1,610	575	592	500	195	115	62	89
11.....	47	50	2,390	3,150	1,330	680	560	485	184	107	66	79
12.....	44	53	2,900	2,500	1,400	732	560	455	173	115	62	69
13.....	44	59	6,340	1,930	1,250	1,560	515	425	163	133	66	72
14.....	39	69	7,250	2,410	1,120	3,180	440	485	163	143	62	76
15.....	44	72	4,780	1,680	940	4,610	411	575	163	133	59	80
16.....	42	76	2,840	1,680	1,080	8,050	397	560	190	111	56	80
17.....	42	69	1,760	2,120	1,440	6,150	470	560	200	107	56	76
18.....	42	83	1,730	2,340	1,400	3,930	411	592	200	103	62	69
19.....	39	143	1,560	1,760	1,330	2,680	411	610	124	99	59	72
20.....	39	319	2,540	2,680	1,060	2,040	1,680	645	236	99	69	69
21.....	42	920	2,720	2,990	1,020	1,730	1,220	610	236	99	62	62
22.....	44	455	7,460	2,010	920	1,440	1,020	545	206	99	62	59
23.....	44	1,330	7,460	1,960	820	1,270	920	485	124	95	56	59
24.....	44	3,080	6,190	1,680	732	1,140	1,220	455	190	91	62	62
25.....	44	5,770	6,240	1,680	698	1,330	1,800	425	182	91	69	66
26.....	44	4,260	7,940	1,560	802	1,080	1,350	411	173	83	66	62
27.....	42	2,060	6,390	1,440	920	1,060	1,020	384	236	83	69	62
28.....	39	2,480	5,460	1,220	880	1,020	920	384	218	87	87	56
29.....	39	1,560	3,930	1,080	860	1,020	860	358	178	91	99	59
30.....	72	1,930	3,250	820	.....	1,020	820	345	168	76	133	59
31.....	62	.....	2,660	820	.....	920	.....	332	.....	72	143	.....

Daily discharge, in second-feet, of Luckiamute River near Suver, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	56	920	455	1,660	1,120	2,870	980	293	515	133	80	69
2.....	53	560	448	1,800	1,400	2,780	880	286	485	139	83	66
3.....	53	364	411	2,340	1,900	2,620	715	280	378	124	80	62
4.....	56	319	371	1,930	2,340	2,450	662	293	345	124	80	62
5.....	59	280	345	1,800	2,480	2,060	592	286	293	153	80	62
6.....	62	254	345	1,660	3,250	1,680	545	267	254	206	76	62
7.....	66	230	358	1,580	2,740	1,500	500	242	254	218	76	62
8.....	69	218	345	1,560	2,260	1,680	485	242	293	242	76	62
9.....	69	206	338	1,420	2,200	1,610	470	248	306	254	76	66
10.....	72	163	332	1,350	2,720	1,600	470	248	319	267	72	66
11.....	62	115	411	1,220	2,680	1,440	440	254	319	218	72	66
12.....	59	163	485	1,140	2,480	1,290	411	254	312	200	69	62
13.....	69	206	645	1,020	2,620	1,140	397	260	306	173	69	62
14.....	345	218	920	920	3,370	1,040	371	260	306	128	69	59
15.....	645	173	1,000	1,680	3,860	980	371	267	218	124	69	59
16.....	411	143	1,020	2,620	4,110	940	384	242	280	115	69	56
17.....	218	345	1,100	3,930	6,150	880	378	242	184	115	62	44
18.....	163	440	1,180	6,590	5,770	840	384	254	190	111	66	44
19.....	95	411	645	8,540	5,800	768	371	242	195	107	62	44
20.....	115	645	530	8,050	4,650	750	364	230	190	103	69	56
21.....	163	1,180	920	7,780	3,790	732	358	218	178	103	72	56
22.....	254	2,200	1,400	7,100	3,680	698	345	206	173	99	69	56
23.....	218	2,620	1,830	5,540	2,680	645	338	195	168	99	69	59
24.....	206	1,860	2,170	3,860	2,560	592	332	195	144	95	69	62
25.....	124	1,490	2,390	2,930	3,680	560	345	195	144	87	69	62
26.....	133	1,200	2,680	2,060	3,180	552	371	195	143	83	69	62
27.....	153	920	2,150	1,860	3,310	545	371	206	143	80	69	66
28.....	163	715	2,330	1,560	2,810	560	345	206	143	69	69	76
29.....	184	785	2,720	1,440	.....	515	332	732	133	62	69	80
30.....	206	500	2,060	1,080	.....	530	326	645	138	66	69	83
31.....	1,100	.....	1,440	980	.....	820	.....	552	.....	69	69	.....
1909-10.												
1.....	103	1,440	5,110	732	2,780	7,000	724	332	153	103	66	42
2.....	107	1,930	4,110	732	2,360	7,380	802	345	163	103	62	36
3.....	107	2,960	3,580	645	1,800	7,050	860	358	163	103	59	36
4.....	103	2,780	2,930	715	1,680	6,390	830	364	163	95	53	36
5.....	95	2,480	2,360	860	1,540	5,770	802	332	148	95	53	36
6.....	83	2,620	1,560	940	1,330	4,740	741	326	148	95	53	36
7.....	80	2,780	2,340	1,090	1,060	4,110	698	280	148	91	53	36
8.....	76	3,020	2,770	1,200	960	3,150	628	267	133	91	56	42
9.....	76	3,080	3,860	1,350	950	2,480	1,440	260	120	87	53	42
10.....	72	2,930	4,820	1,220	920	1,800	1,430	260	120	80	53	42
11.....	69	2,780	4,900	1,160	900	1,380	1,330	267	120	80	53	42
12.....	69	2,480	7,520	1,120	802	1,220	1,020	254	120	80	56	42
13.....	69	2,060	5,540	1,000	1,880	1,140	1,160	254	120	76	53	42
14.....	69	1,440	4,340	960	2,480	1,130	970	254	120	72	50	42
15.....	69	1,020	3,340	802	2,060	1,000	920	254	120	72	50	42
16.....	69	1,930	2,620	1,680	1,930	920	785	248	120	72	50	42
17.....	72	2,340	2,200	2,620	1,860	802	759	242	120	69	50	72
18.....	44	2,480	1,660	2,600	1,830	802	732	242	120	69	44	72
19.....	115	3,080	1,330	2,560	1,680	794	680	230	120	66	44	87
20.....	163	6,240	1,220	2,480	2,200	777	654	206	120	66	44	99
21.....	163	4,220	1,160	2,680	2,480	732	628	206	111	59	44	103
22.....	168	7,100	1,020	4,490	2,740	688	610	206	111	59	47	111
23.....	168	8,770	980	4,110	3,250	628	584	206	111	59	47	111
24.....	168	8,050	900	4,260	5,540	610	515	206	111	66	47	72
25.....	163	6,940	840	3,750	6,240	545	470	195	111	66	47	42
26.....	115	4,630	820	3,680	5,540	538	397	190	111	66	47	53
27.....	115	2,600	732	3,410	6,240	515	364	184	103	66	47	53
28.....	163	4,410	645	3,080	7,100	470	358	170	103	66	42	53
29.....	163	4,610	662	3,180	.....	432	332	163	103	66	42	53
30.....	168	7,000	698	3,250	.....	397	332	163	103	66	42	53
31.....	645	.....	732	3,080	.....	364	.....	163	.....	66	42	.....

NOTE.—Daily discharge determined from rating curves as follows: 1905 and 1906, well defined between 60 and 1,300 second-feet, probably somewhat too large above 1,300 second-feet; 1907 to 1910, well defined between 60 and 5,000 second-feet, but only fairly well defined at low water for 1909 and 1910.

Monthly discharge of Luckiamute River near Suver, Oreg., for 1905-1910.

[Drainage area, 233 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
Aug. 26-31.....	76	41	55.4	0.238	0.05	1,320	C.
September.....	280	39	76.6	.329	.37	4,560	B.
1905-6.							
October.....	1,290	133	396	1.70	1.96	24,300	A.
November.....	1,000	115	247	1.06	1.18	14,700	B.
December.....	4,400	375	1,450	6.22	7.17	89,200	B.
January.....	5,610	1,000	2,720	11.7	13.49	167,000	B.
February.....	6,590	420	2,410	10.3	10.73	134,000	B.
March.....	3,330	546	1,060	4.55	5.25	65,200	B.
April.....	812	280	436	1.87	2.09	25,900	A.
May.....	793	206	381	1.64	1.89	23,400	A.
June.....	1,220	263	492	2.11	2.35	29,300	A.
July.....	319	115	192	.824	.95	11,800	B.
August.....	115	53	85.0	.365	.42	5,230	B.
September.....	168	37	84.5	.363	.40	5,030	B.
The year.....	6,590	37	822	3.53	47.88	595,000	
1906-7.							
October.....	1,140	72	314	1.35	1.56	19,300	A.
November.....	7,450	173	2,640	11.3	12.61	157,000	B.
December.....	6,840	580	2,290	9.83	11.33	141,000	B.
January.....	9,450	610	2,020	8.67	10.00	124,000	A.
February.....	8,100	530	2,660	11.4	11.87	148,000	A.
March.....	1,880	645	1,200	5.15	5.94	73,800	A.
April.....	6,190	425	1,500	6.44	7.18	89,300	A.
May.....	628	230	325	1.39	1.60	20,000	A.
June.....	242	115	173	.743	.83	10,300	A.
July.....	153	50	86.4	.371	.43	5,310	A.
August.....	66	44	54.0	.232	.27	3,320	B.
September.....	163	36	59.6	.256	.29	3,550	B.
The year.....	9,450	36	1,100	4.72	63.91	795,000	
1907-8.							
October.....	107	39	55.1	.236	.27	3,390	B.
November.....	5,770	50	869	3.73	4.16	51,700	A.
December.....	7,940	860	3,460	14.9	17.18	213,000	A.
January.....	4,110	820	2,260	9.70	11.18	139,000	A.
February.....	4,610	698	1,380	5.92	6.38	79,400	A.
March.....	8,050	560	1,750	7.51	8.66	108,000	A.
April.....	1,800	397	840	3.61	4.03	50,000	A.
May.....	1,020	322	562	2.41	2.78	34,600	A.
June.....	332	124	214	.918	1.02	12,700	A.
July.....	153	72	112	.481	.55	6,890	A.
August.....	143	44	68.2	.293	.34	4,190	A.
September.....	168	56	88.8	.381	.43	5,280	A.
The year.....	7,940	29	972	4.17	56.98	708,000	
1908-9.							
October.....	1,100	53	184	.790	.91	11,300	A.
November.....	2,620	115	661	2.84	3.17	39,300	A.
December.....	2,720	332	1,090	4.68	5.40	67,000	A.
January.....	8,540	920	2,870	12.3	14.18	176,000	A.
February.....	6,150	1,120	3,200	13.7	14.27	178,000	A.
March.....	2,870	515	1,220	5.24	6.04	75,000	A.
April.....	980	326	454	1.95	2.18	27,000	A.
May.....	732	195	282	1.21	1.40	17,300	A.
June.....	515	133	248	1.06	1.18	14,800	A.
July.....	267	62	134	.575	.66	8,240	A.
August.....	83	62	71.5	.307	.35	4,400	B.
September.....	83	44	61.8	.265	.30	3,680	B.
The year.....	8,540	44	860	3.69	50.04	622,000	
1909-10.							
October.....	645	44	126	.541	.62	7,750	B.
November.....	8,770	1,020	3,670	15.8	17.63	218,000	A.
December.....	7,520	645	2,490	10.7	12.34	153,000	A.
January.....	4,490	645	2,110	9.06	10.44	130,000	A.
February.....	7,100	802	2,580	11.1	11.56	143,000	A.
March.....	7,380	364	2,120	9.10	10.49	130,000	A.
April.....	1,440	332	752	3.23	3.60	44,700	A.
May.....	364	163	246	1.06	1.22	15,100	A.
June.....	163	103	125	.536	.60	7,440	A.
July.....	103	59	76.5	.328	.38	4,700	B.
August.....	66	42	50.0	.215	.25	3,070	B.
September.....	111	36	55.7	.239	.27	3,310	B.
The year.....	8,770	36	1,190	5.11	69.40	860,000	

SOUTH FORK OF YAMHILL RIVER AT SHERIDAN, OREG.

Location.—In sec. 35, T. 5 S., R. 6 W., at highway bridge in Sheridan, about 2 miles below Mill Creek.

Records available.—April 25, 1906, to June 30, 1909; August 3 to September 10, 1910.

Drainage area.—290 square miles.

Gage.—Vertical staff on bridge piers.

Channel.—Sand and fine gravel; somewhat shifting; banks covered with dense growth of willows and brush.

Discharge measurements.—Made from the bridge at gage or by wading near the gage.

Accuracy.—Results good.

Discharge measurements of South Fork of Yamhill River at Sheridan, Oreg., in 1905–1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
Dec. 14	L. R. Allen.....		583	Jan. 9	C. E. Ellsworth.....	7.72	5,180
1906.				10	.....do.....	6.55	3,850
Apr. 25	L. R. Allen.....	2.70	813	Feb. 11	H. D. McGlashan.....	4.60	2,130
May 18	.....do.....	2.34	625	Mar. 16	.....do.....	9.90	7,620
July 1	.....do.....	1.81	436	17	.....do.....	8.60	6,050
Sept. 7	I. B. Oakes.....	.30	48	17	.....do.....	8.10	5,740
Oct. 30	.....do.....	1.80	423	Sept. 9	.....do.....	.49	64
1907.				1910.			
July 30	J. C. Stevens.....	.40	67	Aug. 3	Henshaw and Davenport.....	.06	48
Nov. 27	H. D. McGlashan.....	6.20	3,690				

Daily gage height, in feet, of South Fork of Yamhill River at Sheridan, Oreg., for 1906–1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1906.							1906.						
1.....		2.0	1.9	1.9	0.8	0.3	16.....		2.3	5.0	1.0	0.5	1.7
2.....		2.0	1.8	1.65	.7	.3	17.....		2.5	4.0	1.0	.5	1.6
3.....		1.9	1.8	1.5	.7	.3	18.....		2.4	3.6	1.0	.5	1.0
4.....		2.3	2.9	1.5	.7	.2	19.....		2.3	3.4	1.0	.5	.9
5.....		2.3	2.9	1.45	.6	.3	20.....		2.2	3.0	1.0	.4	.7
6.....		2.2	2.9	1.45	.6	.3	21.....		2.1	2.8	.9	.4	.7
7.....		2.1	3.1	1.4	.6	.3	22.....		2.0	2.6	.9	.4	.6
8.....		2.9	2.8	1.4	.6	.4	23.....		1.9	2.4	.9	.4	.7
9.....		2.8	2.75	1.3	.6	.4	24.....		2.0	2.2	.9	.4	.9
10.....		2.7	2.4	1.3	.5	.4	25.....	2.6	2.5	2.0	.9	.4	1.3
11.....		2.6	2.5	1.3	.5	.5	26.....	2.3	2.5	1.9	.8	.4	1.0
12.....		2.5	3.0	1.35	.5	.6	27.....	2.4	2.9	1.9	.8	.4	.9
13.....		1.7	3.9	1.2	.5	1.4	28.....	2.5	2.3	1.95	.8	.3	.8
14.....		1.7	4.0	1.1	.6	1.6	29.....	2.3	2.2	1.8	.8	.3	.8
15.....		2.3	3.8	1.1	.5	1.7	30.....	2.2	2.1	2.1	.9	.3	.....
							31.....		2.1	.....	.8	.3	.....

Daily gage height, in feet, of South Fork of Yamhill River at Sheridan, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....		2.0	2.5	4.2	10.2	3.7	3.7	2.0	1.3	0.7		0.9
2.....		2.0	2.5	4.0	9.5	4.0	3.5	1.9	1.2			.9
3.....		2.0	2.4	18.25	8.0	3.8	3.4	1.9	1.2			.9
4.....		2.0	2.3	16.0	8.2	3.6	3.2	1.8	1.2			.9
5.....		4.0	2.3	9.5	14.3	3.3	4.2	1.8	1.2			.9
6.....		4.3	2.3	6.5	10.5	3.2	7.5	1.7	1.1			.9
7.....		7.9	8.5	6.0	8.5	3.1	11.4	1.7	1.1			.9
8.....		12.0	6.0	5.0	6.5	3.0	9.2	1.7	1.1			.8
9.....		8.1	6.0	4.0	5.5	2.9	7.0	1.7	1.1			.8
10.....		9.0	5.5	3.6	4.4	2.9	6.2	1.7	1.0			.7
11.....		8.0	5.5	3.4	4.0	2.9	5.5	1.6	1.0			.6
12.....		7.8	5.3	3.3	3.8	3.0	4.5	1.6	1.0			.5
13.....		7.5	5.2	3.1	3.6	2.8	4.3	1.7	1.0			.4
14.....		8.5	4.0	3.0	3.5	2.8	3.7	1.7	1.0			.3
15.....		14.5	4.5	3.0	3.2	2.9	3.5	1.7	1.0			.3
16.....		8.5	5.5	3.0	3.0	2.9	3.5	1.6	.9			.2
17.....		9.5	5.5	3.0	2.9	3.0	3.4	1.6	.9			.3
18.....		8.5	4.4	2.9	2.7	3.2	3.2	1.5	.9			.4
19.....		7.0	4.6	3.0	2.5	3.0	3.0	1.5	.9			.4
20.....		7.0	11.4	3.0	2.4	3.0	3.0	1.6	.9			.4
21.....		5.5	11.6	3.0	2.3	3.0	3.0	1.5	.9			.3
22.....		5.3	7.3	3.0	2.3	3.6	2.5	1.5	.9			.3
23.....		5.0	7.0	2.9	2.3	4.0	2.4	1.5	.8			.2
24.....		4.6	5.9	2.8	2.9	3.8	2.4	1.5	.8			.2
25.....		4.0	6.8	2.7	4.0	3.5	2.3	1.5	.8			.2
26.....		4.0	5.8	2.7	4.2	3.4	2.3	1.5	.8			.2
27.....		3.5	5.8	2.8	3.6	3.0	2.2	1.5	.7			.3
28.....		3.0	5.3	4.0	3.4	3.6	2.2	1.5	.7			1.0
29.....		2.8	4.5	6.0		3.5	2.0	1.4	.7			1.0
30.....	1.8	2.5	4.8	4.3		3.5	2.0	1.4	.7	.4		.5
31.....	1.9		4.5	9.0		3.5		1.3				
1907-8.												
1.....	.3	.2	5.8	9.0	3.0	3.4	3.9	3.2	2.0	1.3	0.65	.56
2.....	.3	.2	5.8	9.0	2.9	3.6	3.8	3.0	1.9	1.2	.65	.54
3.....	.4	.2	4.8	8.8	3.1	3.5	3.8	3.9	1.9	1.2	.65	.54
4.....	.5	.3	3.8	6.8	3.2	3.1	3.7	3.9	1.8	1.0	.62	.52
5.....	.4	.3	4.0	6.4	6.7	3.0	3.7	4.0	1.8	1.0	.62	.52
6.....	.3	.3	4.0	6.1	10.9	2.8	3.0	4.1	1.7	1.0	.60	.60
7.....	.3	.3	5.0	5.6	7.1	2.6	3.5	3.9	1.7	.90	.60	.58
8.....	.2	.3	5.0	5.6	6.8	2.5	3.5	3.4	1.6	.90	.60	.54
9.....	.2	.2	5.1	8.3	6.0	2.4	3.3	3.1	1.6	.90	.58	.54
10.....	.2	.2	4.8	6.6	5.4	2.4	3.3	3.0	1.6	.80	.58	.52
11.....	.2	.3	7.2	6.5	4.8	2.3	3.1	2.9	1.5	.80	.58	.52
12.....	.2	.3	6.3	5.8	4.2	3.0	3.0	2.8	1.5	.80	.55	.55
13.....	.2	.4	15.0	5.5	4.0	4.5	2.9	2.4	1.4	.80	.55	.48
14.....	.2	.4	9.9	5.0	3.9	6.0	2.9	2.4	1.4	.75	.55	.47
15.....	.2	.5	7.5	4.8	3.8	14.0	2.7	2.3	1.4	.75	.52	.47
16.....	.2	.5	6.0	4.6	4.4	12.5	2.6	2.1	1.3	.75	.52	.45
17.....	.2	.5	6.5	5.2	5.3	8.2	4.1	2.0	1.3	.70	.50	.50
18.....	.2	.6	5.0	4.8	4.8	6.3	8.0	2.4	1.2	.70	.50	.54
19.....	.2	1.0	4.5	4.8	4.7	5.0	6.0	2.8	2.5	.70	.52	.60
20.....	.2	2.5	7.6	7.6	4.5	5.0	5.4	3.0	3.4	.70	.55	.60
21.....	.2	3.0	8.0	6.3	4.2	4.9	4.9	3.1	3.0	.65	.70	.60
22.....	.2	3.5	8.5	5.5	3.8	4.8	4.5	2.8	2.7	.65	.70	.65
23.....	.2	4.0	9.5	6.4	3.4	4.8	7.0	2.6	2.5	.65	.68	.65
24.....	.2	11.5	9.0	5.2	3.0	4.7	6.0	2.5	2.0	.65	.68	.70
25.....	.2	9.7	8.0	4.4	2.8	4.5	5.1	2.5	2.9	.65	.66	.70
26.....	.2	7.6	13.5	4.2	2.6	4.5	5.0	2.4	2.9	.75	.64	.65
27.....	.2	6.7	9.5	3.6	2.4	4.3	4.5	2.4	2.6	.75	.62	.60
28.....	.2	6.6	7.2	3.2	2.6	4.1	4.0	2.2	2.5	.75	.62	.60
29.....	.2	6.6	7.0	3.4	3.0	4.0	3.5	2.2	2.4	.72	.60	.62
30.....	.2	5.8	6.3	3.2		3.9	3.3	2.1	2.2	.70	.58	.64
31.....	.2		6.3	3.1		4.1		2.0		.70	.58	

Daily gage height, in feet, of South Fork of Yamhill River at Sheridan, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	0.60	4.8	3.0	5.5	5.0	6.4	3.0	1.0	0.9	.....	.....	.....
2.....	.64	4.4	2.8	5.0	11.0	6.0	3.0	1.0	.9	.....	.....	.....
3.....	.66	4.1	2.7	4.5	12.4	5.3	3.0	1.0	.9	.....	.....	.....
4.....	.65	3.9	2.3	4.0	12.0	5.0	1.8	1.0	.9	.....	.....	.....
5.....	.65	3.6	2.0	4.0	11.7	4.3	1.8	1.0	.9	.....	.....	.....
6.....	.67	3.0	1.9	4.3	8.0	4.6	1.8	1.0	.9	.....	.....	.....
7.....	.70	2.6	1.9	3.9	7.5	4.5	1.8	1.0	.9	.....	.....	.....
8.....	.75	2.4	1.7	3.0	7.0	4.0	1.6	1.0	.9	.....	.....	.....
9.....	.75	2.2	1.5	2.2	7.0	4.0	1.6	1.1	.9	.....	.....	.....
10.....	.72	2.0	2.0	2.0	6.7	3.9	1.6	1.1	.9	.....	.....	.....
11.....	.90	1.8	2.5	1.8	6.0	3.7	1.4	1.1	.9	.....	.....	.....
12.....	2.0	1.3	3.0	1.8	5.7	3.5	1.4	1.1	.9	.....	.....	.....
13.....	2.25	1.1	2.8	4.3	5.0	3.5	1.4	1.0	.9	.....	.....	.....
14.....	2.0	1.0	2.6	8.6	5.0	3.4	1.4	1.0	.9	.....	.....	.....
15.....	1.9	.90	2.0	10.4	5.8	3.4	1.2	1.0	.9	.....	.....	.....
16.....	2.1	.84	2.0	13.0	11.6	3.1	1.2	1.0	.9	.....	.....	.....
17.....	2.5	2.0	1.7	10.2	14.0	3.2	1.2	1.0	.9	.....	.....	.....
18.....	2.0	4.5	1.6	12.0	12.5	3.15	1.2	1.0	.8	.....	.....	.....
19.....	2.1	6.9	1.4	18.1	9.0	3.0	1.2	1.0	.8	.....	.....	.....
20.....	1.7	8.5	1.8	14.3	8.0	3.0	1.0	1.0	.8	.....	.....	.....
21.....	1.3	7.4	1.6	13.3	8.5	3.0	1.0	.9	.8	.....	.....	.....
22.....	1.1	6.8	3.8	10.6	7.3	3.0	1.0	.9	.9	.....	.....	.....
23.....	1.0	6.3	5.3	6.5	7.0	3.1	1.0	.9	.9	.....	.....	.....
24.....	.90	5.2	7.7	6.4	7.0	3.1	1.0	.9	.9	.....	.....	.....
25.....	1.5	5.0	8.15	6.0	6.4	3.1	1.0	.9	.9	.....	.....	.....
26.....	2.1	5.0	7.8	6.0	6.7	3.1	1.0	.9	.9	.....	.....	.....
27.....	2.6	4.4	8.3	5.9	6.2	3.1	1.0	.9	.9	.....	.....	.....
28.....	3.2	3.9	7.3	5.7	6.4	3.1	1.0	.9	.9	.....	.....	.....
29.....	4.1	3.4	7.0	5.7	.....	3.1	1.0	.9	.9	.....	.....	.....
30.....	4.8	3.0	6.3	5.4	.....	3.5	1.0	.9	.9	.....	.....	.....
31.....	5.1	.....	6.0	5.5	.....	3.0	.....	.9	.....	.....	.....	.....

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1910.								
1.....	.....	0.05	11.....	0.05	.....	21.....	0.05	.....
2.....	.....	.05	12.....	.05	.....	22.....	.05	.....
3.....	.....	.05	13.....	.05	.....	23.....	.05	.....
4.....	.....	.05	14.....	.05	.....	24.....	.05	.....
5.....	.....	.05	15.....	.05	.....	25.....	.05	.....
6.....	.....	.05	16.....	.05	.....	26.....	.05	.....
7.....	0.05	.05	17.....	.05	.....	27.....	.05	.....
8.....	.05	.05	18.....	.05	.....	28.....	.05	.....
9.....	.05	.05	19.....	.05	.....	29.....	.05	.....
10.....	.05	.05	20.....	.05	.....	30.....	.05	.....
.....	.....	.....	.....	.....	.....	31.....	.05	.....

Daily discharge, in second-feet, of South Fork of Yamhill River at Sheridan, Oreg., for 1906-1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.	
1906.														
1.....	500	464	464	137	51	16.....	.....	620	2,470	183	80	393	
2.....	500	428	376	116	51	17.....	.....	715	1,660	183	80	359	
3.....	464	428	326	116	51	18.....	.....	670	1,370	183	80	183	
4.....	625	925	326	116	38	19.....	.....	625	1,240	183	80	159	
5.....	625	925	310	97	51	20.....	.....	580	950	183	65	116	
6.....	580	925	310	97	51	21.....	.....	540	870	159	65	116	
7.....	540	1,040	294	97	51	22.....	.....	500	765	159	65	97	
8.....	925	870	294	97	65	23.....	.....	464	670	159	65	116	
9.....	870	842	264	97	65	24.....	.....	500	580	159	65	159	
10.....	815	670	264	80	65	25.....	765	715	500	159	65	264	
11.....	765	715	264	80	80	26.....	625	715	464	137	65	183
12.....	715	980	279	80	97	27.....	670	925	464	137	65	159
13.....	393	1,580	235	80	294	28.....	715	625	482	137	51	137
14.....	393	1,660	208	80	359	29.....	625	580	428	137	51	137
15.....	620	1,510	208	80	393	30.....	580	540	540	159	51	137
.....	31.....	540	137	51

Daily discharge, in second-feet, of South Fork of Yamhill River at Sheridan, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....		500	715	1,810	7,960	1,440	1,440	500	264	116		159
2.....		500	715	1,660	7,140	1,660	1,300	464	235			159
3.....		500	670	18,100	5,450	1,510	1,240	464	235			159
4.....		500	625	15,200	5,670	1,370	1,100	428	235			159
5.....		1,660	625	7,140	13,000	1,170	1,810	428	235			159
6.....		1,890	625	3,890	8,320	1,100	4,900	393	208			159
7.....		5,340	6,000	3,350	6,000	1,040	9,400	393	208			157
8.....		10,200	3,390	2,470	3,890	980	6,790	393	208			137
9.....		5,560	3,390	1,660	2,920	925	4,390	393	208			137
10.....		6,560	2,920	1,370	1,970	925	3,590	393	183			116
11.....		5,450	2,920	1,240	1,660	925	2,920	359	183			97
12.....		5,230	2,740	1,170	1,510	980	2,050	359	183			80
13.....		4,900	2,640	1,040	1,370	870	1,890	393	183			65
14.....		6,000	1,660	980	1,300	870	1,440	393	183			51
15.....		13,300	2,050	980	1,100	925	1,300	393	183			51
16.....		6,000	2,920	980	980	925	1,300	359	159			38
17.....		7,140	2,920	980	925	980	1,240	359	159			51
18.....		6,000	1,970	925	815	1,100	1,100	326	159			65
19.....		4,390	2,130	980	715	980	980	326	159			65
20.....		4,390	9,400	980	670	980	980	359	159			65
21.....		2,920	9,650	980	625	980	980	326	159			51
22.....		2,740	4,690	980	625	1,370	715	326	159			51
23.....		2,470	4,390	925	625	1,660	670	326	137			38
24.....		2,130	3,300	870	925	1,510	670	326	137			38
25.....		1,660	4,190	815	1,660	1,300	625	326	137			38
26.....		1,660	3,200	815	1,810	1,240	625	326	137			38
27.....		1,300	3,200	870	1,370	980	580	326	116			51
28.....		980	2,740	1,660	1,240	1,370	580	326	116			183
29.....		870	2,050	3,390		1,300	500	294	116			183
30.....	428	715	2,300	1,890		1,300	500	294	116	65		80
31.....	464		2,050	6,560		1,300		264				
1907-8.												
1.....	51	38	3,200	6,560	980	1,240	1,580	1,100	500	264	95	78
2.....	51	38	3,200	6,560	925	1,370	1,510	980	464	234	95	74
3.....	65	38	2,300	6,330	1,040	1,300	1,510	1,580	464	234	95	74
4.....	80	51	1,510	4,190	1,100	1,040	1,440	1,580	428	178	89	71
5.....	65	51	1,660	3,790	4,090	980	1,440	1,660	428	178	89	71
6.....	51	51	1,660	3,490	8,800	870	980	1,740	393	178	85	85
7.....	51	51	2,470	3,010	4,490	765	1,300	1,580	393	152	85	81
8.....	38	51	2,470	3,010	4,190	715	1,300	1,240	359	152	85	74
9.....	38	38	2,560	5,780	3,390	670	1,170	1,040	359	152	81	74
10.....	38	38	2,300	3,990	2,820	670	1,170	980	359	127	81	71
11.....	38	51	4,590	3,890	2,300	625	1,040	925	326	127	81	71
12.....	38	51	3,690	3,200	1,810	980	980	870	326	127	76	76
13.....	38	65	13,900	2,920	1,660	2,050	925	670	294	127	76	64
14.....	38	65	7,600	2,470	1,580	3,390	925	670	294	116	76	62
15.....	38	80	4,900	2,300	1,510	12,600	815	625	294	116	71	62
16.....	38	80	3,390	2,130	1,970	10,800	765	540	264	116	71	58
17.....	38	80	3,890	2,640	2,740	5,670	1,740	500	264	105	67	67
18.....	38	97	2,470	2,300	2,300	3,690	5,450	670	234	105	67	74
19.....	38	183	2,050	2,300	2,220	2,470	3,390	870	715	105	71	85
20.....	38	715	5,010	5,010	2,050	2,470	2,820	980	1,240	105	76	85
21.....	38	980	5,450	3,690	1,810	2,380	2,380	1,040	980	95	105	85
22.....	38	1,300	6,000	2,920	1,510	2,300	2,050	870	815	95	105	95
23.....	38	1,660	7,140	3,920	1,240	2,300	4,390	765	715	95	101	95
24.....	38	9,520	6,560	2,640	980	2,220	3,390	715	500	95	101	105
25.....	38	7,360	5,450	1,970	870	2,050	2,560	715	925	95	97	105
26.....	38	5,010	12,000	1,810	765	2,050	2,470	670	925	116	93	95
27.....	38	4,090	7,140	1,370	670	1,890	2,050	670	765	116	89	85
28.....	38	3,990	4,590	1,100	765	1,740	1,660	580	715	116	89	85
29.....	38	3,990	4,390	1,240	980	1,660	1,300	580	670	109	85	89
30.....	38	3,200	3,690	1,100		1,580	1,170	540	580	105	81	93
31.....	38		3,690	1,040		1,740		500		105	81	

Daily discharge, in second-feet, of South Fork of Yamhill River at Sheridan, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	85	2,300	980	2,920	2,470	3,790	980	178	152			
2	93	1,970	870	2,470	8,920	3,390	980	178	152			
3	97	1,740	815	2,050	10,600	2,740	980	178	152			
4	95	1,580	625	1,660	10,200	2,470	428	178	152			
5	95	1,370	500	1,660	9,780	1,890	428	178	152			
6	99	980	464	1,890	5,450	2,130	428	178	152			
7	105	765	464	1,580	4,900	2,050	428	178	152			
8	116	670	393	980	4,390	1,660	359	178	152			
9	116	580	326	580	4,390	1,660	359	205	152			
10	109	500	500	500	4,090	1,580	359	205	152			
11	152	428	715	428	3,390	1,440	294	205	152			
12	500	264	980	428	3,100	1,300	294	205	152			
13	602	205	870	1,890	2,470	1,300	294	178	152			
14	500	178	765	6,110	2,470	1,240	294	178	152			
15	464	152	500	8,200	3,200	1,240	234	178	152			
16	540	137	500	11,400	9,650	1,040	234	178	152			
17	715	500	393	7,960	12,600	1,100	234	178	152			
18	500	2,050	359	10,200	10,800	1,070	234	178	127			
19	540	4,290	294	17,900	6,560	980	234	178	127			
20	393	6,000	428	13,000	5,450	980	178	178	127			
21	264	4,790	359	11,800	6,000	980	178	152	127			
22	205	4,190	1,510	8,440	4,690	980	178	152	152			
23	178	3,690	2,740	3,890	4,390	1,040	178	152	152			
24	152	2,640	5,120	3,790	4,390	1,040	178	152	152			
25	326	2,470	5,620	3,390	3,790	1,040	178	152	152			
26	540	2,470	5,230	3,390	4,090	1,040	178	152	152			
27	765	1,970	5,780	3,300	3,590	1,040	178	152	152			
28	1,100	1,580	4,690	3,100	3,790	1,040	178	152	152			
29	1,740	1,240	4,390	3,100		1,040	178	152	152			
30	2,300	980	3,690	2,820		1,300	178	152	152			
31	2,560		3,390	2,920		980		152				

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1910.								
1		48	11		48	21		48
2		48	12		48	22		48
3		48	13		48	23		48
4		48	14		48	24		48
5		48	15		48	25		48
6		48	16		48	26		48
7	48	48	17		48	27		48
8	48	48	18		48	28		48
9	48	48	19		48	29		48
10	48	48	20		48	30		48
						31		48

NOTE.—Daily discharge determined as follows: 1906 and 1907, from rating curve well defined between 50 and 8,000 second-feet; 1908 and 1909, from curve well defined between 60 and 8,000 second-feet; and 1910, from well-defined curve.

Monthly discharge of South Fork of Yamhill River at Sheridan, Oreg., for 1906-1909.

[Drainage area, 290 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906.							
April 25-30.....	765	580	663	2.29	0.51	7,890	A.
May.....	925	393	619	2.13	2.46	38,100	A.
June.....	2,470	428	915	3.16	3.53	54,400	A.
July.....	464	137	225	.776	.89	13,800	A.
August.....	137	51	81.0	.279	.32	4,980	A.
September.....	393	38	149	.514	.57	8,870	A.
The period.....						128,000	
1906-7.							
November.....	13,300	500	3,780	13.0	14.50	225,000	A.
December.....	9,650	625	2,990	10.3	11.87	184,000	A.
January.....	18,100	815	2,800	9.66	11.14	172,000	A.
February.....	13,000	625	2,940	10.1	10.52	163,000	A.
March.....	1,660	870	1,160	4.00	4.61	71,300	A.
April.....	9,400	500	1,920	6.62	7.39	114,000	A.
May.....	500	264	366	1.26	1.45	22,500	A.
June.....	264	116	175	.603	.67	10,400	A.
September.....	183	38	96.1	.331	.37	5,720	A.
1907-8.							
October.....	80	38	42.8	.148	.17	2,630	B.
November.....	9,520	38	1,430	4.93	5.50	85,100	A.
December.....	13,900	1,510	4,540	15.7	18.10	279,000	A.
January.....	6,560	1,040	3,180	11.0	12.68	196,000	A.
February.....	8,800	670	2,120	7.31	7.88	122,000	A.
March.....	12,600	625	2,460	8.48	9.78	151,000	A.
April.....	5,450	765	1,860	6.41	7.15	111,000	A.
May.....	1,740	500	918	3.17	3.66	56,400	A.
June.....	1,240	234	533	1.84	2.05	31,700	A.
July.....	264	95	134	.462	.53	8,240	A.
August.....	105	67	85.1	.293	.34	5,230	B.
September.....	105	58	79.6	.274	.31	4,740	B.
The year.....	13,900	38	1,450	5.00	68.15	1,050,000	
1908-9.							
October.....	2,560	85	518	1.79	2.06	31,900	A.
November.....	6,000	137	1,760	6.07	6.77	105,000	A.
December.....	5,780	294	1,750	6.03	6.95	108,000	A.
January.....	17,900	428	4,640	16.0	18.45	285,000	A.
February.....	12,600	2,470	5,700	19.7	20.51	317,000	A.
March.....	3,790	980	1,500	5.17	5.96	92,200	A.
April.....	980	178	334	1.15	1.28	19,900	B.
May.....	205	152	172	.593	.68	10,600	B.
June.....	152	127	149	.514	.57	8,870	B.
The period.....						978,000	

YAMHILL RIVER AT LA FAYETTE, OREG.

Location.—In sec. 7, T. 4 S., R. 3 W., at the Government locks, three-fourths mile below La Fayette, and about 8 miles above the mouth.

Records available.—October 6, 1908, to September 30, 1910, from Geological Survey gage.

Drainage area.—Not measured.

Gage.—Vertical staff at the county bridge at La Fayette. Readings have also been made on vertical staff gages belonging to the United States Engineer Corps, attached to lower end of locks, and in the backwater just above the locks.

Channel.—Gravel, sand, and mud; shifts at low water.

Discharge measurements.—Made from highway bridge at La Fayette, three-fourths mile above the locks, or by wading below the locks.

Accuracy.—Estimates of discharge are withheld for additional data.

Cooperation.—Gage-height record for lower gage furnished by United States Engineer Corps.

Discharge measurement of Yamhill River at La Fayette, Oreg., in 1910.

Date.	Hydrographers.	Gage height.		Dis-charge.
		Bridge.	Below locks.	
Aug. 2 ^a	Henshaw and Davenport.....	<i>Fect.</i> 1.24	<i>Fect.</i> 3.08	<i>Sec.-ft.</i> 60

^a Measured by wading below the locks.

Daily gage height, in feet, of Yamhill River at La Fayette, Oreg., for 1908-1910.

[United States Geological Survey gage at bridge.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		3.9	3.2	5.5	6.7	6.8	4.2	2.7	2.5	1.8	1.55	1.2
2.....		3.5	3.3	6.5	8.8	6.9	4.1	2.5	2.2	1.8	1.55	1.2
3.....		3.5	3.2	8.5	9.8	7.0	3.7	2.4	2.3	1.8	1.5	1.3
4.....		3.2	3.1	8.3	9.1	6.8	3.4	2.5	2.1	1.7	1.5	1.25
5.....		3.0	3.0	7.7	8.5	6.5	3.3	2.6	2.2	1.7	1.5	1.2
6.....	1.2	2.7	2.8	6.9	8.6	5.8	3.1	2.5	2.2	1.9	1.5	1.25
7.....	.95	2.4	3.0	6.5	8.6	5.6	2.8	2.5	2.3	2.0	1.5	.9
8.....	.9	2.4	2.9	5.9	8.0	5.2	2.7	2.5	2.3	2.1	1.45	.7
9.....	1.0	2.4	3.2	5.6	7.5	5.8	2.7	2.4	2.3	1.9	1.45	.5
10.....	1.2	2.2	3.1	5.4	7.1	5.9	2.6	2.3	2.3	1.8	1.4	.4
11.....	1.2	2.1	3.0	3.9	7.2	5.0	3.0	2.7	2.3	1.8	1.5	.3
12.....	1.2	2.1	3.1	3.3	6.5	4.6	3.2	2.7	2.1	1.8	1.5	.45
13.....	1.3	2.1	4.7	3.3	7.1	4.3	3.2	2.7	2.1	1.9	1.5	.45
14.....	1.3	2.1	5.2	3.0	6.9	4.0	3.2	2.5	2.1	1.9	1.5	.45
15.....	3.4	2.1	4.2	4.5	7.1	4.0	3.1	2.4	2.0	1.8	1.5	.3
16.....	2.3	2.1	4.9	7.7	8.2	3.7	2.8	2.4	2.0	1.8	1.5	.35
17.....	2.0	2.1	3.7	11.5	11.2	3.7	2.8	2.4	2.0	1.8	1.45	.3
18.....	2.0	2.4	4.0	17.5	13.6	3.7	2.9	2.4	2.0	1.8	1.45	1.1
19.....	1.8	3.3	3.7	21.4	14.8	3.5	2.7	2.3	1.9	1.7	1.4	1.3
20.....	2.0	2.9	3.7	27.3	13.5	3.6	2.7	2.1	1.9	1.7	1.35	1.35
21.....	2.4	4.3	3.5	29.0	11.4	3.9	2.7	1.9	1.9	1.7	1.4	1.25
22.....	2.5	6.5	4.5	27.5	8.2	3.7	2.7	1.9	1.9	1.7	1.45	1.3
23.....	2.0	7.0	4.2	25.3	6.8	3.6	2.6	2.2	1.8	1.65	1.4	1.3
24.....	2.0	7.5	7.0	22.0	6.6	3.4	2.6	2.2	1.8	1.6	1.4	1.25
25.....	1.9	6.4	5.7	16.0	7.6	3.3	2.5	2.1	1.8	1.6	1.4	1.3
26.....	1.8	5.5	7.3	8.0	7.5	3.1	2.5	2.1	1.8	1.6	1.4	1.35
27.....	1.8	5.0	7.1	6.4	7.0	3.1	2.5	1.9	1.8	.9	1.4	1.25
28.....	1.7	3.7	8.0	5.5	7.3	3.3	2.7	2.1	1.8	.5	1.4	1.35
29.....	1.7	3.8	7.8	5.5		3.3	2.7	2.3	1.8	.5	1.4	1.3
30.....	1.9	3.2	7.0	4.8		3.3	2.7	2.5	1.9	1.4	1.1	1.2
31.....	3.2		6.5	5.4		3.3		2.5		1.6	1.1	

Daily gage height, in feet, of Yamhill River at La Fayette, Oreg., for 1908-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.4	3.0	13.2	4.4	6.8	16.0	3.0	2.8	1.9	1.6	1.2	1.3
2.....	1.35	3.8	11.2	3.9	6.3	17.18	2.5	2.8	1.9	1.6	1.2	1.3
3.....	1.35	7.3	7.8	3.4	5.8	18.85	3.9	2.8	1.8	1.6	1.2	1.3
4.....	1.1	6.8	7.0	3.2	4.8	19.45	3.8	2.9	1.8	1.6	1.2	1.3
5.....	1.2	5.35	5.9	3.0	4.8	16.65	3.6	2.8	1.8	1.6	1.25	1.3
6.....	1.2	4.3	4.7	2.9	4.5	10.2	3.2	2.8	1.8	1.6	1.3	1.3
7.....	1.6	3.75	4.9	3.3	4.3	7.1	3.0	2.65	1.8	1.6	1.25	1.3
8.....	1.65	6.1	5.1	4.3	4.0	6.1	4.7	2.6	1.75	1.55	1.2	1.3
9.....	.9	7.1	7.9	5.0	3.8	5.2	6.3	2.5	1.75	1.55	1.25	1.3
10.....	1.4	7.2	10.0	4.9	3.9	4.8	5.1	2.5	1.7	1.5	1.3	1.3
11.....	1.4	7.5	12.0	4.8	4.3	4.6	5.5	2.5	1.7	1.45	1.3	1.3
12.....	1.45	6.8	16.1	4.3	4.5	4.5	5.65	2.5	1.85	1.45	1.3	1.3
13.....	1.45	6.0	18.4	4.0	5.5	4.3	5.5	2.4	1.85	1.4	1.3	1.3
14.....	1.45	4.8	17.8	4.0	7.0	4.15	4.3	2.4	1.8	1.4	1.3	1.3
15.....	1.45	4.2	14.2	4.0	6.8	4.0	4.1	2.3	1.8	1.4	1.35	1.3
16.....	1.4	3.8	8.0	3.7	6.2	3.8	3.9	2.3	1.7	1.35	1.3	1.4
17.....	1.4	3.7	6.5	4.4	6.2	3.6	3.6	2.2	1.7	1.4	1.35	1.4
18.....	1.4	4.7	5.6	7.0	5.6	3.5	3.3	2.2	1.7	1.4	1.3	1.4
19.....	1.4	7.1	5.1	8.9	6.8	3.5	3.3	2.1	1.7	1.4	1.3	1.5
20.....	1.5	9.5	4.7	8.1	5.7	3.4	3.2	2.1	1.7	1.4	1.4	1.5
21.....	2.1	11.0	4.3	7.4	6.5	3.7	3.1	2.2	1.7	1.4	1.3	1.45
22.....	2.8	14.7	4.0	7.7	6.2	3.5	3.0	2.1	1.8	1.3	1.35	1.4
23.....	2.6	19.9	3.6	8.1	6.5	3.4	2.85	2.1	1.8	1.6	1.3	1.4
24.....	2.25	25.6	3.3	10.7	8.35	3.3	2.9	2.1	1.8	1.5	1.3	1.35
25.....	2.0	28.2	3.3	10.5	11.0	3.2	2.7	2.1	1.7	1.5	1.3	1.35
26.....	1.9	31.3	3.3	10.1	13.25	3.2	2.6	2.1	1.65	1.35	1.15	1.4
27.....	1.85	27.3	3.2	8.5	15.0	3.2	2.5	2.0	1.6	1.35	1.05	1.35
28.....	1.75	18.9	3.0	8.0	15.1	3.0	2.4	2.0	1.6	1.35	1.2	1.3
29.....	1.75	11.1	3.0	7.6	.....	3.0	2.35	2.0	1.6	1.3	1.2	1.25
30.....	1.85	13.4	2.9	6.9	.....	2.9	2.4	2.0	1.6	1.3	1.2	1.3
31.....	2.15	.....	4.4	7.1	.....	2.8	.....	2.0	.....	1.25	1.3	.....

[Lower gage at locks: United States Engineer Corps.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1910.												
1.....	12.2	20.7	34.7	8.7	7.9	5.4	4.2	3.1	2.8
2.....	11.8	18.3	36.5	8.7	8.0	5.2	4.2	3.1	2.9
3.....	11.0	17.0	37.9	11.1	7.8	5.1	4.1	3.1	2.8
4.....	10.0	14.7	38.7	11.5	8.0	5.0	4.1	3.1	2.8
5.....	9.2	13.8	35.3	11.0	8.6	4.9	4.0	3.1	2.8
6.....	9.1	13.2	30.0	10.4	8.7	4.8	4.0	3.1	2.8
7.....	9.7	12.7	24.5	10.4	8.2	4.8	3.9	3.1	2.8
8.....	11.0	12.1	21.0	12.8	8.0	4.8	3.9	3.0	2.8
9.....	13.0	11.7	18.0	15.8	7.8	4.7	3.8	3.0	2.8
10.....	12.6	11.4	16.6	13.6	7.8	4.6	3.8	3.0	2.8
11.....	12.1	12.3	15.5	14.3	8.4	4.8	3.7	3.0	2.8
12.....	11.6	12.6	15.0	14.8	10.0	4.9	3.6	3.0	2.8
13.....	11.0	14.9	14.8	13.6	9.6	5.2	3.6	3.0	2.8
14.....	10.9	19.6	14.8	12.7	9.0	5.0	3.5	3.0	2.8
15.....	10.8	20.0	14.8	12.1	8.4	4.8	3.5	2.9	2.8
16.....	10.6	21.1	14.4	11.5	7.9	4.7	3.5	2.9	3.0
17.....	11.3	17.9	13.9	10.8	7.3	4.6	3.5	3.0	3.0
18.....	19.3	16.2	13.4	10.3	7.1	4.5	3.5	3.0	3.0
19.....	23.8	18.8	13.0	10.0	6.9	4.5	3.5	2.9	3.2
20.....	22.0	18.6	13.2	10.0	6.8	4.5	3.5	2.9	3.1
21.....	19.8	20.0	12.8	10.0	6.5	4.5	3.4	2.9	3.0
22.....	20.6	19.2	12.0	9.8	6.4	4.6	3.4	2.9	3.1
23.....	23.2	19.1	11.9	9.6	6.4	4.8	3.7	2.9	3.2
24.....	28.6	24.0	12.9	9.4	6.3	4.8	3.6	2.9	3.1
25.....	28.7	29.4	12.4	9.3	6.0	4.7	3.5	2.8	3.1
26.....	28.2	32.1	11.7	9.3	6.0	4.5	3.4	2.8	2.9
27.....	25.3	33.4	10.8	9.1	6.0	4.4	3.3	2.7	2.9
28.....	23.2	33.5	10.2	8.8	6.0	4.3	3.3	2.8	2.9
29.....	23.6	.....	9.8	8.2	5.9	4.3	3.2	2.8	2.9
30.....	22.4	.....	9.2	7.8	5.8	4.2	3.1	2.8	2.8
31.....	21.6	.....	8.8	.....	5.6	.....	3.1	2.8	.....

MOLALLA RIVER NEAR MOLALLA, OREG.

Location.—In sec. 21, T. 5 S., R. 2 E., at Dickey Prairie, 3 miles below the mouth of North Fork, 3½ miles southeast of Molalla.

Records available.—November 1, 1905, to July 12, 1909.

Drainage area.—220 square miles.

Gage.—Staff in two sections; lower section inclined, upper vertical.

Channel.—Gravel and small boulders; shifting.

Discharge measurements.—Made from cable or by wading.

Accuracy.—Results good.

Discharge measurements of Molalla River near Molalla, Oreg., in 1905-1908.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 2	L. R. Allen.....	1.83	376	Aug. 23	J. C. Stevens.....	1.00	76
				Oct. 3	E. F. Kreigsman.....	1.45	177
1906.				1908.			
Jan. 9 ^a	L. R. Allen.....	3.63	1,510	Sept. 29	H. D. McGlashan.....	.94	61
13	P. A. Cupper.....	3.55	1,610				
Apr. 3	L. R. Allen.....	2.80	924				
May 24	.....do.....	2.66	822				
July 11	.....do.....	1.33	186				
Sept. 4	I. E. Oakes.....	.75	60				

^a Measurement unreliable.

Daily gage height, in feet, of Molalla River near Molalla, Oreg., for 1905-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....		1.85	2.8	2.7	3.75	3.75	3.4	2.7	2.25	1.9	1.0	0.75
2.....		1.8	4.5	2.7	3.5	3.45	3.0	2.5	2.15	1.85	.95	.75
3.....		1.75	4.0	2.75	3.4	3.7	2.8	2.4	2.25	1.8	.95	.75
4.....		1.75	3.6	2.8	3.3	3.65	2.7	2.3	2.5	1.75	.95	.75
5.....		1.7	3.8	3.15	2.8	3.45	2.7	2.2	2.5	1.65	.9	.75
6.....		1.6	3.8	3.1	2.7	3.55	2.7	2.15	2.75	1.5	.9	.75
7.....		1.55	3.85	3.05	2.6	3.6	2.8	2.1	2.95	1.45	.9	.75
8.....		1.5	3.5	3.3	2.5	3.7	2.7	2.0	2.85	1.45	.9	.75
9.....		1.45	3.2	3.7	2.35	3.8	2.8	2.0	2.85	1.4	.9	.75
10.....		1.4	2.9	3.45	2.3	3.5	2.7	1.9	2.75	1.4	.9	.75
11.....		1.4	2.7	3.5	2.2	3.3	2.7	1.85	2.65	1.35	.9	.75
12.....		1.35	2.55	3.5	2.15	3.0	2.7	1.8	2.55	1.3	.85	.85
13.....		1.35	2.45	3.55	2.1	2.7	2.5	1.75	2.55	1.3	.85	1.3
14.....		1.3	2.3	3.5	2.05	2.65	2.45	2.15	2.5	1.25	.9	2.8
15.....		1.3	2.25	3.7	2.5	2.45	2.35	2.4	3.0	1.2	.9	2.5
16.....		1.25	2.45	3.9	2.5	2.3	2.35	2.35	4.0	1.2	.85	1.8
17.....		1.25	3.8	3.9	3.9	2.25	2.3	3.3	3.4	1.2	.85	1.45
18.....		1.6	3.5	3.95	5.0	2.2	2.25	2.3	3.0	1.2	.85	1.3
19.....		3.7	3.4	3.45	4.7	2.15	2.15	2.6	2.8	1.2	.85	1.2
20.....		2.9	3.2	3.1	5.9	2.1	2.1	2.7	2.6	1.15	.8	1.15
21.....		2.5	3.1	2.9	5.4	2.1	2.25	2.75	2.4	1.15	.8	1.15
22.....		2.25	2.85	2.95	4.5	2.05	2.25	2.8	2.3	1.15	.8	1.1
23.....		2.05	2.7	4.85	4.35	2.0	2.25	2.85	2.2	1.15	.8	1.2
24.....		1.9	2.45	5.2	4.5	2.2	2.2	2.65	2.1	1.1	.8	1.3
25.....		1.85	2.4	4.5	4.4	2.1	3.4	2.5	1.95	1.1	.8	1.2
26.....		2.9	3.7	4.0	4.6	2.35	3.0	2.65	1.85	1.1	.8	1.1
27.....		2.55	3.4	3.75	4.9	2.45	2.7	2.6	1.9	1.1	.75	1.05
28.....		2.4	3.1	3.5	4.35	2.4	3.1	2.5	1.95	1.1	.75	1.0
29.....		2.6	2.8	3.5	.....	2.5	3.05	2.45	2.05	1.05	.75	.95
30.....		2.9	3.2	3.7	.....	2.7	2.85	2.4	2.0	1.05	.75	.95
31.....		3.0	4.0	.....	3.7	.....	2.35	.....	1.0	.75	.....

Daily gage height, in feet, of Molalla River near Molalla, Oreg., for 1905-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.	1.0	1.85	2.25	2.95	6.1	3.5	3.3	2.6	1.8	1.6		
2.	1.05	1.8	2.15	2.8	5.0	3.4	3.3	2.5	1.7	1.7		
3.	1.6	1.75	2.1	9.0	8.0	3.3	3.2	2.4	1.7	2.0		
4.	1.55	2.5	2.05	7.5	9.8	3.2	3.2	2.4	1.7	1.8		
5.	1.4	2.6	2.4	5.6		3.0	3.3	2.3	1.7	1.7		
6.	1.35	2.5	2.5	4.5		2.9	4.2	2.3	1.6	1.6		
7.	1.3	6.8	3.3	4.1		3.0	8.3	2.3	1.7	1.5		
8.	1.1	6.5	3.65	3.65		3.2	6.2	2.2	1.8	1.4		
9.	1.05	4.9	3.4	3.4		3.3	5.3	2.2	1.8	1.4		
10.	1.0	5.3	3.0	3.2		3.5	5.5	2.5	1.8			
11.	1.05	4.4	3.2	3.0	3.6	3.5	4.7	2.4	1.9			
12.	1.05	4.0	3.4	2.8	3.4	3.55	4.2	2.3	2.0			
13.	2.2	7.45	2.8	2.7	3.3	3.4	4.2	2.3	2.0			
14.	2.65	8.1	2.7	2.45	3.1	3.0	4.0	2.5	2.1			
15.	2.2	8.85	3.4	2.3	3.0	3.2	3.8	2.5	2.1			
16.	3.6	6.2	3.9	2.25	2.9	3.4	3.5	2.4	2.2			1.8
17.	3.9	6.0	3.2	2.25	2.7	3.4	3.3	2.4	2.1			1.7
18.	3.3	5.3	3.2	2.3	2.6	3.5	4.4	2.4	2.1			1.5
19.	3.1	4.4	3.5	2.2	2.9	3.8	5.1	2.4	2.0			
20.	2.75	4.0	7.5	2.3	3.0	4.0	4.4	2.3	1.9			
21.	2.5	3.8	6.0	2.25	3.0	3.8	4.0	2.3	1.8			
22.	2.35	3.6	4.6	2.35	3.0	3.6	3.8	2.2	1.9			
23.	2.1	3.4	4.2	2.3	3.1	3.4	3.7	2.2	2.0		1.0	
24.	1.95	3.1	3.6	2.5	3.6	3.1	3.5	2.1	1.9			
25.	1.9	2.9	4.2	2.45	3.8	2.9	3.3	2.0	1.8		1.6	
26.	1.95	2.75	4.5	2.5	3.7	2.8	3.1	2.0	1.8		1.4	
27.	1.95	2.6	3.9	2.7	3.6	2.8	2.9	1.9	1.7			
28.	1.95	2.5	3.5	4.3	3.6	2.9	2.8	1.9	1.7			
29.	1.9	2.35	3.4	5.4		3.0	2.7	1.8	1.6			
30.	1.85	2.3	3.3	5.4		3.1	2.7	1.8	1.6			
31.	1.85		3.2	7.0		3.3		1.8				
1907-8.												
1.	1.4	1.6	3.2	3.4	2.3	2.4	3.2	3.0	3.2	2.3		1.6
2.	1.5	1.9	3.1	3.3	2.2	2.4	3.3	3.0	3.2	2.3		1.5
3.	1.5	1.8	3.0	3.3	2.3	2.4	3.4	3.0	3.1	2.2		
4.	1.45	1.6	3.0	3.2	2.4	2.3	3.4	2.9	3.1	2.1		
5.	1.4	1.5	3.2	3.2	3.4	2.3	3.3	2.8	3.0	2.0		
6.		1.4	3.3	3.3	4.5	2.3	3.1	2.8	2.9	2.0		
7.			3.8	3.3	4.0	2.2	3.0	2.8	3.0	1.9		
8.			3.7	3.6	3.8	2.2	2.8	3.0	3.0	1.8		
9.			4.0	4.4	3.6	2.2	2.7	3.0	2.9	1.7		
10.			3.8	4.3	3.5	2.4	2.9	2.9	2.8	1.6		
11.			3.7	4.2	3.2	2.5	3.1	3.0	2.8	1.5		
12.			4.2	3.9	3.0	2.7	3.3	3.2	2.7	1.5		
13.			4.1	3.7	2.8	2.9	3.3	3.0	2.6	1.5		
14.		1.5	4.0	3.5	2.7	4.9	3.2	3.0	2.4	1.4		
15.		1.5	3.9	3.4	2.7	10.0	3.2	3.4	2.3	1.4		
16.		1.4	3.8	3.3	2.7	7.5	3.1	4.4	2.2			
17.		1.4	3.6	3.5	2.7	5.6	3.3	4.0	2.1			
18.		1.4	3.5	3.4	2.8	4.8	4.6	4.5	2.3			
19.			3.6	3.6	2.7	3.9	4.4	4.3	2.7			
20.		2.8	3.8	4.4	2.6	3.5	4.1	4.1	3.2			
21.		2.6	5.5	4.0	2.6	3.4	4.0	3.8	3.1			
22.		2.4	7.2	3.8	2.5	3.3	3.9	3.6	3.0			
23.		2.5	6.5	3.6	2.5	3.3	3.8	3.4	2.8			
24.		7.45	6.8	3.5	2.4	3.3	5.4	3.4	2.7			
25.		6.0	7.5	3.3	2.4	3.5	4.4	3.3	2.5			
26.		5.4	7.8	3.0	2.3	3.3	3.9	3.3	2.7			
27.		4.5	6.5	2.9	2.3	3.2	3.5	3.2	2.6			
28.		4.0	5.6	2.8	2.4	3.3	3.2	3.1	2.5			
29.		3.6	4.9	2.6	2.5	3.3	3.0	3.1	2.4			
30.	1.5	3.3	4.0	2.5		3.2	3.0	3.2	2.4		2.0	.95
31.	1.5		3.6	2.4		3.2		3.2		1.8		

Daily gage height, in feet, of Molalla River near Molalla, Oreg., for 1905-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	0.95	3.0	2.4	3.0	3.0	4.1	4.4	3.0	3.9	1.8	.....	.....
2.....	1.15	2.6	2.3	3.3	3.2	4.2	3.9	3.5	3.7	1.7	.....	.....
3.....	1.15	2.3	2.2	3.4	3.3	4.2	3.6	3.4	3.6	1.6	.....	.....
4.....	1.05	2.1	2.1	4.5	3.4	4.3	3.4	3.3	3.3	1.6	.....	.....
5.....	1.05	2.0	2.1	4.1	3.5	4.5	3.3	3.2	3.1	1.4	.....	.....
6.....	1.05	1.9	2.0	3.8	3.4	4.5	3.2	3.0	3.0	3.45	.....	.....
7.....	.95	1.8	2.0	4.3	3.3	4.3	3.1	2.9	2.9	3.1	.....	.....
8.....	.95	1.7	1.9	3.8	3.3	4.1	3.1	2.8	2.7	2.8	.....	.....
9.....	.95	1.7	1.9	3.5	3.2	3.8	3.0	2.8	2.5	2.7	.....	.....
10.....	.95	1.6	1.8	3.1	3.3	3.5	2.9	2.9	2.4	2.6	.....	.....
11.....	.95	1.5	1.8	2.8	3.3	3.4	2.9	2.9	2.5	2.6	.....	.....
12.....	.95	1.5	2.0	2.5	3.4	3.3	2.8	3.0	2.5	2.5	.....	.....
13.....	1.15	1.4	3.0	2.4	3.5	3.2	2.8	3.0	2.4	.....	.....	.....
14.....	2.8	1.4	2.8	2.6	3.4	3.1	2.8	2.9	2.3	.....	.....	.....
15.....	2.6	1.4	2.6	5.9	3.8	3.2	2.8	3.0	2.3	.....	.....	.....
16.....	2.5	1.4	2.4	6.8	5.9	3.3	2.7	3.0	2.2	.....	.....	.....
17.....	2.3	1.4	2.2	6.9	6.3	3.4	2.7	3.0	2.3	.....	.....	.....
18.....	2.3	3.3	2.1	6.5	6.7	3.5	2.7	3.0	2.4	.....	.....	.....
19.....	2.4	2.6	2.0	9.5	5.6	3.3	2.6	3.0	2.3	.....	.....	.....
20.....	2.6	3.8	1.9	8.6	4.9	3.1	2.6	2.9	2.3	.....	.....	.....
21.....	2.4	4.2	1.8	8.4	4.5	3.0	2.5	2.8	2.2	.....	.....	.....
22.....	2.2	4.9	1.9	6.5	4.0	3.0	2.6	2.7	2.1	.....	.....	.....
23.....	2.0	4.2	1.9	5.2	3.8	3.1	2.6	2.6	2.1	.....	.....	.....
24.....	1.9	4.0	2.1	4.5	4.1	3.1	2.7	2.5	2.0	.....	.....	.....
25.....	1.8	3.6	3.3	4.2	3.7	3.0	2.8	2.6	2.0	.....	.....	.....
26.....	1.7	3.0	4.1	4.0	3.9	3.0	2.8	3.0	1.9	.....	.....	.....
27.....	1.7	2.8	4.3	3.8	4.1	2.9	4.2	3.4	1.9	.....	.....	.....
28.....	1.6	2.6	4.5	3.5	4.2	2.9	3.8	3.7	1.9	.....	.....	.....
29.....	1.6	2.5	4.2	3.3	.....	2.8	3.6	3.8	1.8	.....	.....	.....
30.....	3.1	2.5	3.7	3.1	.....	3.2	3.5	4.2	1.8	.....	.....	.....
31.....	3.7	.....	3.4	3.0	.....	3.5	.....	4.1	.....	.....	.....	.....

NOTE.—All omitted gage heights for 1907-8 were below 1.4 feet. The gage could not be read below this point and the observer estimated the stage. It was found that he made errors of 0.1 foot more or less, according to stages, in making these readings.

Daily discharge, in second-feet, of Molalla River near Molalla, Oreg., for 1905-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	388	920	855	1,640	1,640	1,350	855	592	411	106	60
2.....	364	2,320	855	1,430	1,390	1,060	735	537	387	96	60
3.....	342	1,860	887	1,350	1,600	920	675	592	364	96	60
4.....	342	1,510	920	1,280	1,550	855	620	735	342	96	60
5.....	320	1,680	1,160	920	1,390	855	565	735	300	86	60
6.....	279	1,680	1,120	855	1,470	855	537	887	242	86	60
7.....	260	1,720	1,090	795	1,510	920	510	1,020	225	86	60
8.....	242	1,430	1,280	735	1,600	855	460	952	225	86	60
9.....	225	1,200	1,600	647	1,680	920	460	952	208	86	60
10.....	208	985	1,390	620	1,430	855	411	887	208	86	60
11.....	208	855	1,430	565	1,280	855	387	825	193	86	60
12.....	193	765	1,430	537	1,060	855	364	765	178	77	77
13.....	193	705	1,470	510	855	735	342	765	178	77	178
14.....	178	620	1,430	485	825	705	537	735	164	86	920
15.....	178	592	1,600	735	705	647	675	1,060	151	86	735
16.....	164	705	1,770	735	620	647	647	1,860	151	77	364
17.....	164	1,680	1,770	1,770	592	620	620	1,350	151	77	225
18.....	279	1,430	1,810	2,810	565	592	620	1,650	151	77	178
19.....	1,600	1,350	1,390	2,510	537	537	795	920	151	77	151
20.....	985	1,200	1,120	3,750	510	510	855	795	139	68	139
21.....	735	1,120	985	3,220	510	592	887	675	139	68	139
22.....	592	952	1,020	2,320	485	592	920	620	139	68	127
23.....	485	855	2,660	2,180	460	592	952	565	139	68	151
24.....	411	705	3,020	2,320	565	565	825	510	127	68	178
25.....	388	675	2,320	2,220	510	1,350	735	435	127	68	151
26.....	985	1,600	1,660	2,410	647	1,050	825	387	127	68	127
27.....	765	1,350	1,640	2,710	705	855	795	411	127	60	116
28.....	675	1,120	1,430	2,180	675	1,120	735	435	127	60	106
29.....	795	920	1,430	.....	735	1,090	705	485	116	60	96
30.....	985	1,200	1,600	.....	855	952	675	460	116	60	96
31.....	1,060	1,860	.....	1,600	.....	647	.....	106	60	.....

Daily discharge, in second-feet, of Molalla River near Molalla, Oreg., for 1905-1909—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	106	388	592	1,020	3,960	1,420	1,260	760	312	231	50	110
2.....	116	364	538	920	2,810	1,340	1,260	695	268	268	50	90
3.....	279	344	510	7,300	6,100	1,260	1,180	635	268	409	50	90
4.....	260	242	485	5,530	8,300	1,180	1,180	635	268	312	50	90
5.....	208	279	675	3,440	9,800	1,030	1,260	575	268	268	50	80
6.....	193	242	735	2,320	7,060	960	2,040	575	231	231	50	80
7.....	178	4,740	1,280	1,950	5,180	1,030	6,460	575	268	196	50	80
8.....	127	4,400	1,550	1,550	4,080	1,180	4,080	515	312	165	50	70
9.....	116	2,710	1,350	1,350	3,120	1,260	3,120	515	312	165	50	70
10.....	106	3,120	1,060	1,200	2,220	1,420	3,330	695	312	150	50	70
11.....	116	2,220	1,200	1,060	1,510	1,420	2,510	635	359	140	50	60
12.....	300	1,860	1,350	920	1,340	1,470	2,040	575	409	130	50	60
13.....	565	5,470	920	855	1,260	1,340	2,040	575	409	110	50	70
14.....	825	6,220	855	705	1,100	1,030	1,860	695	461	110	50	90
15.....	565	7,120	1,350	620	1,030	1,180	1,680	695	461	90	50	90
16.....	1,510	4,080	1,770	592	960	1,340	1,420	635	515	90	70	312
17.....	1,770	3,860	1,200	592	825	1,340	1,260	635	461	75	70	268
18.....	1,280	3,120	1,200	620	760	1,420	2,220	635	461	75	70	196
19.....	1,120	2,220	1,430	565	960	1,680	2,910	635	409	75	70	150
20.....	888	1,860	5,530	620	1,030	1,860	2,220	575	359	60	70	140
21.....	735	1,680	3,860	592	1,030	1,680	1,860	575	312	60	70	110
22.....	648	1,510	2,420	648	1,030	1,510	1,680	515	359	60	70	110
23.....	510	1,350	2,040	620	1,100	1,340	1,600	515	409	50	72	110
24.....	436	1,120	1,510	735	1,510	1,100	1,420	461	359	50	90	90
25.....	411	985	2,040	705	1,680	960	1,260	409	312	50	231	90
26.....	436	888	2,320	735	1,600	890	1,100	409	312	50	165	90
27.....	436	795	1,770	855	1,510	890	960	359	268	50	140	140
28.....	436	735	1,430	2,130	1,510	960	890	359	268	40	110	110
29.....	411	648	1,350	3,220	.....	1,030	825	312	231	40	110	110
30.....	388	620	1,280	3,220	.....	1,100	825	312	231	40	110	150
31.....	388	.....	1,200	4,960	.....	1,260	.....	312	.....	40	110	.....
1907-8.												
1.....	165	231	1,180	1,340	575	635	1,180	1,030	1,180	575	50	231
2.....	196	359	1,100	1,260	515	635	1,260	1,030	1,180	575	50	196
3.....	196	312	1,030	1,260	575	635	1,340	1,030	1,100	515	50	150
4.....	180	231	1,030	1,180	635	575	1,340	960	1,100	461	50	120
5.....	165	196	1,180	1,180	1,340	575	1,260	890	1,030	409	50	100
6.....	150	165	1,260	1,260	2,320	575	1,100	890	960	409	50	90
7.....	150	150	1,680	1,260	1,860	515	1,030	890	1,030	359	50	80
8.....	150	130	1,600	1,510	1,680	515	890	1,030	1,030	312	50	80
9.....	140	110	1,860	2,220	1,510	515	825	1,030	960	268	50	80
10.....	140	100	1,680	2,130	1,420	635	960	960	890	231	50	70
11.....	140	100	1,600	2,040	1,180	695	1,100	1,030	890	196	50	70
12.....	140	160	2,040	1,770	1,030	825	1,260	1,180	825	196	50	70
13.....	110	150	1,950	1,600	890	960	1,260	1,030	760	196	50	70
14.....	110	196	1,860	1,420	825	2,710	1,180	1,030	635	165	50	60
15.....	140	196	1,770	1,340	825	8,550	1,180	1,340	575	165	50	60
16.....	140	165	1,680	1,260	825	5,530	1,100	2,220	515	150	50	60
17.....	110	165	1,510	1,420	825	3,440	1,260	1,860	461	130	50	60
18.....	110	165	1,420	1,340	890	2,610	2,420	2,320	575	130	50	50
19.....	110	150	1,510	1,510	825	1,770	2,220	2,130	825	130	50	50
20.....	110	890	1,680	2,220	760	1,420	1,950	1,950	1,180	110	50	90
21.....	140	760	3,330	1,860	760	1,340	1,860	1,680	1,100	110	50	90
22.....	140	635	5,180	1,680	695	1,260	1,770	1,510	1,030	110	50	90
23.....	110	695	4,400	1,510	695	1,260	1,680	1,340	890	90	50	90
24.....	110	5,470	4,740	1,420	635	1,260	3,220	1,340	825	90	50	70
25.....	110	3,860	5,530	1,260	635	1,420	2,220	2,260	695	90	50	70
26.....	90	3,220	5,880	1,030	575	1,260	1,770	1,260	825	70	50	70
27.....	90	2,320	4,400	960	575	1,180	1,420	1,180	760	70	50	70
28.....	90	1,860	3,440	890	635	1,260	1,180	1,100	695	55	50	64
29.....	140	1,510	2,710	760	695	1,260	1,030	1,100	635	55	50	64
30.....	196	1,260	1,860	695	.....	1,180	1,030	1,180	635	55	409	64
31.....	196	.....	1,510	635	.....	1,180	.....	1,180	.....	55	312	.....

Daily discharge, in second-feet, of Molalla River near Molalla, Oreg., for 1905-1909—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	64	1,030	635	1,030	1,030	1,950	2,220	1,030	1,770	312	-----	-----
2.....	101	760	575	1,260	1,180	2,040	1,770	1,420	1,600	268	-----	-----
3.....	101	575	515	1,340	1,260	2,040	1,510	1,340	1,510	231	-----	-----
4.....	81	461	461	2,320	1,340	2,130	1,340	1,260	1,260	231	-----	-----
5.....	81	409	461	1,950	1,420	2,320	1,260	1,180	1,100	165	-----	-----
6.....	81	359	409	1,680	1,340	2,320	1,180	1,030	1,030	1,380	-----	-----
7.....	64	312	409	2,130	1,260	2,130	1,100	960	960	1,100	-----	-----
8.....	64	268	359	1,680	1,260	1,950	1,100	890	825	890	-----	-----
9.....	64	268	359	1,420	1,180	1,680	1,030	890	695	825	-----	-----
10.....	64	231	312	1,100	1,260	1,420	960	960	635	760	-----	-----
11.....	64	196	312	890	1,260	1,340	960	960	695	760	-----	-----
12.....	64	196	409	695	1,340	1,260	890	1,030	695	695	-----	-----
13.....	101	165	1,030	635	1,420	1,180	890	1,030	635	-----	-----	-----
14.....	890	165	890	760	1,340	1,100	890	960	575	-----	-----	-----
15.....	760	165	760	3,750	1,680	1,180	890	1,030	575	-----	-----	-----
16.....	695	165	635	4,740	3,750	1,260	825	1,030	515	-----	-----	-----
17.....	575	165	515	4,840	4,180	1,340	825	1,030	575	-----	-----	-----
18.....	575	1,260	461	4,400	4,620	1,420	825	1,030	635	-----	-----	-----
19.....	635	760	409	7,930	3,440	1,260	760	1,030	575	-----	-----	-----
20.....	760	1,680	359	6,820	2,710	1,100	760	960	575	-----	-----	-----
21.....	635	2,040	312	6,580	2,320	1,030	695	890	515	-----	-----	-----
22.....	515	2,710	359	4,400	1,860	1,030	760	825	461	-----	-----	-----
23.....	409	2,040	359	3,020	1,680	1,100	760	760	461	-----	-----	-----
24.....	359	1,860	461	2,320	1,950	1,140	825	695	409	-----	-----	-----
25.....	312	1,510	1,260	2,040	1,600	1,030	890	760	409	-----	-----	-----
26.....	268	1,030	1,950	1,860	1,770	1,030	890	1,030	359	-----	-----	-----
27.....	268	890	2,130	1,680	1,950	960	2,040	1,340	359	-----	-----	-----
28.....	231	760	2,320	1,420	2,040	960	1,680	1,600	359	-----	-----	-----
29.....	231	695	2,040	1,260	-----	890	1,510	1,680	312	-----	-----	-----
30.....	1,100	695	1,600	1,100	-----	1,180	1,420	2,040	312	-----	-----	-----
31.....	1,600	-----	1,340	1,030	-----	1,420	-----	1,950	-----	-----	-----	-----

NOTE.—Daily discharge determined from two rating curves, one applicable Nov. 1, 1905, to Jan. 31, 1907, well defined between 50 and 1,000 second-feet, and the other applicable Feb. 1, 1907, to July 12, 1909, well defined between 60 and 1,000 second-feet. Discharge Feb. 5-7, 1907, estimated. Discharge estimates below 160 second-feet, July to November, 1907, and July to September, 1908, obtained by comparison with records of Clackamas and North Fork of Santiam rivers, are subject to large errors and are given merely to show in a rough way the relatively low flow at low stages at this station compared with other streams rising in the Cascade Mountains.

Monthly discharge of Molalla River near Molalla, Oreg., for 1905-1909.

[Drainage area, 220 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905-6.							
November.....	1,600	164	464	2.11	2.35	27,600	A.
December.....	2,320	592	1,190	5.41	6.24	73,200	B.
January.....	3,020	855	1,490	6.77	7.80	91,600	B.
February.....	3,750	485	1,580	7.18	7.48	87,800	B.
March.....	1,680	460	986	4.48	5.16	60,600	A.
April.....	1,350	510	830	3.77	4.21	49,400	A.
May.....	952	342	657	2.99	3.45	40,400	A.
June.....	1,860	387	787	3.58	3.99	46,800	A.
July.....	411	106	191	.868	1.00	11,700	B.
August.....	106	60	77.6	.353	.407	4,770	B.
September.....	920	60	164	.745	.831	9,760	B.
The period.....	-----	-----	-----	-----	-----	504,000	-----

Monthly discharge of Molalla River near Molalla, Oreg., for 1905-1909—Continued.

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906-7.							
October.....	1,770	106	512	2.33	2.69	31,500	B.
November.....	7,120	242	2,170	9.86	11.00	129,000	A.
December.....	5,530	485	1,510	6.86	7.91	92,800	A.
January.....	7,300	565	1,680	7.64	8.81	103,000	B.
February.....	9,800	760	2,600	12.1	12.60	148,000	C.
March.....	1,860	890	1,250	5.68	6.55	76,900	A.
April.....	6,460	825	1,920	8.73	9.74	114,000	B.
May.....	760	312	548	2.49	2.87	33,700	A.
June.....	515	231	339	1.54	1.72	20,200	A.
July.....	409	40	125	.508	.65	7,690	C.
August.....	231	50	75	.341	.39	4,610	D.
September.....	312	60	110	.500	.56	6,550	D.
The year.....	9,800	40	1,060	4.82	65.49	768,000	
1907-8.							
October.....	196	90	140	.637	.73	8,610	D.
November.....	5,470	100	862	3.92	4.37	51,300	A.
December.....	5,880	1,030	2,370	10.8	12.45	146,000	B.
January.....	2,220	635	1,390	6.32	7.29	85,500	A.
February.....	2,320	515	938	4.26	4.59	54,000	A.
March.....	8,550	515	1,550	7.05	8.13	95,300	A.
April.....	3,220	825	1,440	6.55	7.31	85,700	A.
May.....	2,320	890	1,290	5.86	6.76	79,300	A.
June.....	1,380	461	860	3.91	4.36	51,200	A.
July.....	575	55	210	.955	1.10	12,900	C.
August.....	409	50	70	.318	.37	4,300	D.
September.....	231	50	85	.386	.43	5,060	D.
The year.....	8,550	50	934	4.25	57.89	679,000	
1908-9.							
October.....	1,600	64	381	1.73	1.99	23,400	A.
November.....	2,710	165	794	3.61	4.03	47,200	A.
December.....	2,320	312	787	3.58	4.13	48,400	A.
January.....	7,930	635	2,520	11.5	13.26	155,000	C.
February.....	4,620	1,030	1,910	8.68	9.04	106,000	B.
March.....	2,320	890	1,420	6.45	7.44	87,300	B.
April.....	2,220	695	1,120	5.09	5.68	66,600	B.
May.....	2,040	695	1,120	5.09	5.87	68,900	B.
June.....	1,770	312	713	3.24	3.62	42,400	B.
July 1-12.....	1,380	165	635	2.89	1.29	15,100	B.
The period.....						660,000	

CLACKAMAS RIVER NEAR CAZADERO, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 11, T. 4 S., R. 4 E., 2 miles above the dam of the Portland Railway Light & Power Co., at Cazadero.

Records available.—January 1, 1909, to September 30, 1910.

Drainage area.—685 square miles.

Gage.—Friez automatic gage on right bank.

Channel.—Rocks and gravel; shifts in extreme floods.

Discharge measurements.—Made from cable 50 feet below gage.

Accuracy.—Results excellent.

Cooperation.—Gage-height record and a part of the discharge measurements furnished by the Portland Railway Light & Power Co.

Discharge measurements of Clackamas River near Cazadero, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 17	H. D. McGlashan	27.75	3,180	Jan. 11	S. C. Hulse	27.15	1,640
Aug. 24	S. C. Hulse	25.77	992	26	do	29.54	4,360
26	J. C. Stevens	25.81	982	June 14	do	26.78	1,480
Sept. 29	S. C. Hulse	25.95	1,200	14	F. C. Ebert	26.78	1,370
Oct. 6	do	25.88	1,040	18	S. C. Hulse	26.70	1,350
6	do	25.88	1,120	26	do	26.60	1,270
13	do	25.71	936	26	F. C. Ebert	26.60	1,240
20	do	26.50	1,620	July 1	S. C. Hulse	26.50	1,190
29	do	26.20	1,330	13	do	26.38	1,050
29	do	26.20	1,430	22	do	26.29	1,000
Nov. 3	do	32.80	13,000	Aug. 3	do	26.20	958
12	do	27.40	2,550	Sept. 3	do	26.10	856
13	do	30.22	7,680	15	do	26.09	840
Dec. 17	do	28.90	3,610				
24	do	27.72	2,390				

Daily gage height, in feet, of Clackamas River near Cazadero, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1				27.02	27.42	28.15	28.58	27.91	28.95	26.33	26.00	25.73
2				26.98	27.39	28.78	28.35	28.10	28.84	26.30	25.98	25.72
3				26.96	27.56	28.58	28.10	28.50	28.51	26.28	25.95	25.71
4				28.70	27.50	28.40	27.98	28.88	28.86	26.24	25.92	25.70
5				28.25	27.50	28.12	27.88	28.42	28.07	26.27	25.90	25.69
6				27.75	27.39	27.88	27.70	28.15	27.85	26.78	25.89	25.68
7				28.60	27.30	27.69	27.55	27.90	27.72	26.79	25.88	25.68
8				28.65	27.15	27.70	27.49	27.85	27.56	26.48	25.85	25.67
9				27.85	27.15	27.62	27.52	27.85	27.52	26.38	25.85	25.67
10				26.95	27.11	27.48	27.59	27.82	27.51	26.35	25.83	25.70
11				28.55	27.04	27.38	27.50	27.86	27.52	26.39	25.82	25.78
12				30.25	27.02	27.32	27.50	27.85	27.44	26.35	25.80	25.77
13				28.75	27.05	27.30	27.46	27.70	27.26	26.30	25.80	25.72
14				27.15	27.08	27.30	27.50	27.62	27.18	26.24	25.80	25.70
15				28.95	27.58	27.38	27.53	27.58	27.14	26.19	25.80	25.69
16				31.50	28.85	27.55	27.53	27.58	27.16	26.16	25.80	25.68
17				30.70	31.20	27.75	27.51	27.62	27.10	26.16	25.79	25.68
18				32.00	30.55	27.66	27.50	27.52	27.00	26.15	25.79	25.68
19				34.75	29.95	27.56	27.42	27.52	26.89	26.12	25.78	25.67
20				36.15	29.15	27.48	27.40	27.48	26.84	26.04	25.76	25.86
21				34.10	28.60	27.38	27.30	27.42	26.76	26.01	25.76	26.09
22				31.95	28.22	27.26	27.29	27.35	26.71	26.00	25.76	25.88
23				30.45	27.98	27.21	27.28	27.29	26.64	25.79	25.75	25.76
24				29.50	28.35	27.19	27.22	27.26	26.60	25.58	25.75	25.73
25				28.88	28.45	27.22	27.30	27.36	26.54	26.00	25.75	25.72
26				28.42	28.20	27.25	27.72	27.60	26.52	26.12	25.78	25.72
27				28.12	28.10	27.42	28.98	28.15	26.52	26.25	25.79	25.72
28				27.90	28.10	27.53	29.00	28.14	26.46	26.19	25.77	25.72
29				27.68	27.65	27.65	28.41	28.15	26.40	26.14	25.74	25.91
30				27.55	27.60	27.60	28.10	28.41	26.36	26.06	25.74	26.00
31				27.48	27.84	27.84	28.76	28.76	26.01	25.74	25.74	25.74

Daily gage height, in feet, of Clackamas River near Cazadero, Ore., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	25.96	27.40	31.15	27.65	28.72	34.80	28.31	28.28	27.08	26.53	26.24	26.12
2	25.84	30.90	30.28	27.48	28.45	35.82	28.68	28.14	27.02	26.50	26.24	26.10
3	25.80	29.98	29.68	27.35	28.24	33.90	28.80	28.62	26.97	26.48	26.23	26.10
4	25.74	28.92	29.18	27.40	28.13	32.35	28.66	28.86	26.92	26.46	26.22	26.10
5	25.72	28.30	28.91	27.30	27.89	31.86	28.68	28.73	26.97	26.46	26.21	26.10
6	25.86	27.80	28.56	27.34	27.77	30.95	28.83	28.50	26.95	26.45	26.20	26.10
7	25.90	27.44	28.40	27.34	27.68	30.33	28.85	28.52	26.87	26.44	26.20	26.10
8	25.81	27.69	28.31	27.28	27.58	29.85	29.28	28.63	26.83	26.43	26.20	26.10
9	25.79	27.90	28.64	27.20	27.54	29.72	29.26	28.65	26.80	26.40	26.20	26.10
10	25.75	27.95	28.36	27.15	27.48	29.65	29.21	29.08	26.78	26.40	26.19	26.10
11	25.74	27.82	28.91	27.15	27.50	29.73	29.20	29.10	27.04	26.38	26.18	26.10
12	25.73	27.43	31.92	27.13	27.60	30.08	29.17	28.70	26.96	26.37	26.18	26.10
13	25.72	27.31	31.90	27.07	28.53	30.50	29.14	28.48	26.86	26.36	26.18	26.10
14	25.70	27.05	30.60	27.04	28.37	30.77	28.86	28.24	26.79	26.36	26.18	26.10
15	25.69	26.82	29.80	27.00	28.00	30.78	28.64	28.08	26.75	26.35	26.19	26.10
16	25.68	26.68	29.34	26.95	27.78	30.72	28.59	27.92	26.75	26.35	26.20	26.10
17	25.67	26.72	28.89	26.92	27.77	30.67	28.64	27.80	26.72	26.36	26.19	26.10
18	25.66	29.34	28.62	27.40	28.04	30.65	28.93	27.75	26.70	26.35	26.17	26.10
19	25.75	32.85	28.39	27.70	28.08	30.92	29.36	27.70	26.80	26.35	26.15	26.10
20	26.42	34.70	28.22	27.40	27.97	30.60	29.49	27.58	26.78	26.32	26.14	26.21
21	26.46	30.72	28.02	27.80	27.90	30.23	29.33	27.62	26.77	26.31	26.14	26.41
22	26.28	41.00	27.88	29.71	27.72	30.21	29.10	27.47	26.77	26.30	26.14	26.19
23	26.08	38.25	27.78	31.62	27.77	30.20	29.27	27.47	26.74	26.30	26.14	26.13
24	25.98	38.90	27.68	31.82	29.28	29.72	29.52	27.46	26.68	26.30	26.14	26.10
25	25.92	33.40	27.60	30.55	31.00	29.33	29.55	27.45	26.63	26.28	26.14	26.09
26	25.84	31.65	27.55	29.60	29.80	29.05	29.38	27.35	26.60	26.28	26.14	26.08
27	25.82	30.65	27.48	29.30	30.30	28.80	28.92	27.32	26.59	26.27	26.14	26.07
28	25.81	31.50	27.41	30.05	31.80	28.66	28.63	27.28	26.58	26.27	26.15	26.07
29	26.19	31.09	27.34	29.42	.....	28.45	28.38	27.20	26.57	26.26	26.17	26.07
30	26.10	32.55	27.36	29.07	.....	28.30	28.30	27.17	26.55	26.25	26.16	26.07
31	26.28	.....	28.02	29.04	.....	28.34	.....	27.10	.....	26.24	26.14	.....

NOTE.—Add 500 feet for sea-level datum.

Daily discharge, in second-feet, of Clackamas River near Cazadero, Ore., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1	2,200	2,710	3,780	4,510	3,420	5,140	1,480	1,180	950
2	2,160	2,670	4,850	4,120	3,700	4,950	1,450	1,160	942
3	2,140	2,890	4,510	3,700	4,370	4,390	1,430	1,140	934
4	4,710	2,810	4,200	3,520	5,020	4,980	1,400	1,110	925
5	3,940	2,810	3,730	3,370	4,230	3,660	1,420	1,100	917
6	3,180	2,670	3,370	3,100	3,780	3,320	1,940	1,080	908
7	4,540	2,560	3,080	2,880	3,400	3,130	1,950	1,080	908
8	4,620	2,360	3,100	2,800	3,320	2,890	1,620	1,050	900
9	3,320	2,360	2,980	2,840	3,320	2,840	1,520	1,050	900
10	2,120	2,310	2,780	2,940	3,280	2,820	1,500	1,040	925
11	4,460	2,230	2,650	2,810	3,340	2,840	1,530	1,030	993
12	7,640	2,200	2,580	2,810	3,320	2,730	1,500	1,010	984
13	4,800	2,240	2,550	2,760	3,100	2,500	1,450	1,010	942
14	2,360	2,280	2,550	2,810	2,980	2,400	1,400	1,010	925
15	5,140	2,930	2,650	2,850	2,920	2,350	1,350	1,010	917
16	10,460	4,960	2,880	2,850	2,920	2,370	1,320	1,010	908
17	8,570	9,650	3,180	2,820	2,980	2,300	1,320	1,000	908
18	11,600	8,260	3,040	2,810	2,840	2,180	1,320	1,000	908
19	18,600	7,040	2,890	2,710	2,840	2,060	1,290	993	900
20	22,700	5,490	2,780	2,680	2,780	2,000	1,220	976	1,060
21	16,900	4,540	2,650	2,550	2,710	1,920	1,190	976	1,260
22	11,400	3,890	2,500	2,540	2,620	1,860	1,180	976	1,080
23	8,040	3,520	2,430	2,520	2,540	1,780	1,000	968	976
24	6,140	4,120	2,410	2,450	2,500	1,740	825	968	950
25	5,020	4,280	2,450	2,550	2,630	1,680	1,180	968	942
26	4,230	3,860	2,480	3,130	2,950	1,660	1,200	993	942
27	3,730	3,700	2,710	3,190	3,780	1,660	1,400	1,000	942
28	3,400	3,700	2,850	5,220	3,700	1,600	1,350	984	942
29	3,070	.....	3,020	4,220	3,780	1,540	1,310	959	1,100
30	2,850	.....	2,950	3,700	4,220	1,500	1,230	959	1,180
31	2,780	.....	3,310	.....	4,810	.....	1,190	959	.....

Daily discharge, in second-feet, of Clackamas River near Cazadero, Oreg., for 1909-10—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,150	2,680	8,000	2,250	3,400	15,100	2,950	2,920	1,690	1,200	952	856
2.....	1,040	8,990	6,260	2,080	3,100	17,600	3,360	2,760	1,640	1,170	952	840
3.....	1,010	7,100	5,180	1,950	2,870	13,000	3,490	3,290	1,590	1,150	944	840
4.....	959	5,080	4,370	2,000	2,750	9,440	3,340	3,560	1,550	1,130	936	840
5.....	942	4,030	3,960	1,900	2,490	8,420	3,360	3,410	1,590	1,130	928	840
6.....	1,060	3,250	3,460	1,940	2,370	6,660	3,520	3,160	1,580	1,120	920	840
7.....	1,100	2,730	3,240	1,940	2,280	5,570	3,540	3,180	1,500	1,120	920	840
8.....	1,020	3,080	3,120	1,840	2,180	4,840	4,070	3,300	1,470	1,110	920	840
9.....	1,000	3,400	3,580	1,800	2,140	4,660	4,050	3,320	1,440	1,080	920	840
10.....	968	3,480	3,190	1,760	2,080	4,560	3,980	3,820	1,420	1,080	912	840
11.....	959	3,280	3,960	1,760	2,100	4,670	3,970	3,840	1,660	1,060	904	840
12.....	950	2,720	9,570	1,740	2,200	5,170	3,930	3,380	1,580	1,060	904	840
13.....	942	2,560	9,530	1,680	3,190	5,850	3,890	3,140	1,490	1,050	904	840
14.....	925	2,240	6,900	1,660	3,020	6,330	3,560	2,870	1,430	1,050	904	840
15.....	917	1,980	5,380	1,620	2,610	6,340	3,350	2,700	1,400	1,040	912	840
16.....	908	1,830	4,610	1,580	2,380	6,240	3,260	2,520	1,400	1,040	920	840
17.....	900	1,870	3,930	1,550	2,370	6,150	3,310	2,400	1,370	1,050	912	840
18.....	892	5,840	3,550	2,000	2,650	6,110	3,640	2,350	1,350	1,040	896	840
19.....	968	13,700	3,230	2,300	2,700	6,600	4,180	2,300	1,440	1,040	880	840
20.....	1,560	18,500	3,010	2,000	2,580	6,020	4,350	2,180	1,420	1,020	872	928
21.....	1,600	8,610	2,750	2,400	2,500	5,410	4,140	2,220	1,410	1,010	872	1,090
22.....	1,430	37,600	2,580	4,640	2,320	5,880	3,840	2,070	1,410	1,000	872	912
23.....	1,250	29,000	2,460	7,940	2,370	5,360	4,060	2,070	1,390	1,000	872	864
24.....	1,160	31,000	2,440	8,340	4,070	4,660	4,290	2,060	1,330	1,000	872	840
25.....	1,110	13,100	2,240	5,940	6,750	4,140	4,420	2,050	1,290	984	872	833
26.....	1,040	9,000	2,180	4,490	4,770	3,780	4,200	1,950	1,260	984	872	826
27.....	1,030	7,000	2,100	4,100	5,520	3,490	3,620	1,920	1,250	976	872	819
28.....	1,020	8,700	2,010	5,120	8,300	3,340	3,300	1,880	1,240	976	880	819
29.....	1,350	7,880	1,930	4,260	.....	3,100	3,030	1,800	1,230	968	896	819
30.....	1,270	11,000	1,950	3,800	.....	2,940	2,940	1,770	1,220	960	888	819
31.....	1,430	.....	2,750	3,770	.....	2,980	.....	1,710	.....	952	872	.....

NOTE.—Daily discharge determined from three rating curves applicable as follows: Jan. 1 to Nov. 24, 1909, well defined between 900 and 14,000 second-feet; Nov. 25 to Dec. 31, 1909, well defined between 2,300 and 12,000 second-feet; 1910, well defined between 840 and 4,500 second-feet.

Monthly discharge of Clackamas River near Cazadero, Oreg., for 1909-10.

[Drainage area, 685 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1909.							
January.....	22,700	2,120	6,350	9.27	10.69	390,000	A.
February.....	9,650	2,200	3,750	5.47	5.70	208,000	A.
March.....	4,850	2,410	3,030	4.42	5.10	186,000	A.
April.....	5,220	2,450	3,190	4.66	5.20	190,000	A.
May.....	5,020	2,500	3,360	4.91	5.66	207,000	A.
June.....	5,140	1,500	2,630	3.84	4.28	156,000	A.
July.....	1,950	825	1,370	2.00	2.31	84,200	A.
August.....	1,180	959	1,020	1.49	1.72	62,700	A.
September.....	1,260	900	966	1.41	1.57	57,500	A.
The period.....						1,540,000	
1909-10.							
October.....	1,600	892	1,090	1.59	1.83	67,000	A.
November.....	37,600	1,830	8,710	12.7	14.17	518,000	B.
December.....	9,570	1,930	3,980	5.81	6.70	245,000	B.
January.....	8,340	1,550	2,970	4.34	5.00	183,000	A.
February.....	8,300	2,080	3,140	4.58	4.77	174,000	A.
March.....	17,600	2,940	6,250	9.12	10.51	384,000	B.
April.....	4,420	2,940	3,700	5.40	6.02	220,000	A.
May.....	3,840	1,710	2,640	3.85	4.44	162,000	A.
June.....	1,690	1,220	1,430	2.09	2.33	85,100	A.
July.....	1,200	952	1,050	1.53	1.76	64,600	A.
August.....	952	872	902	1.32	1.52	55,500	A.
September.....	1,090	819	852	1.24	1.38	50,700	A.
The year.....	37,600	819	3,050	4.45	60.43	2,210,000	

CLACKAMAS RIVER AT ESTACADA, OREG.

Location.—In the NE. $\frac{1}{4}$ sec. 29, T. 3 S., R. 4 E., in the Oregon Water Power Co.'s park at Estacada, about 2 miles below the dam at Cazadero.

Records available.—April 6, 1908, to September 30, 1910.

Drainage area.—688 square miles.

Gage.—Inclined staff in three sections on right bank.

Channel.—Rocks and gravel; practically permanent.

Discharge measurements.—Made from cable one-fourth mile below the gage.

Accuracy.—Results fair.

Cooperation.—Gage-height record furnished by the Portland Railway Light & Power Co. and the United States Weather Bureau.

Discharge measurements of Clackamas River at Estacada, Oreg., in 1908-9.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1908.		<i>Fect.</i>	<i>Sec.-ft.</i>	1909.		<i>Fect.</i>	<i>Sec.-ft.</i>
Apr. 6	J. C. Stevens.....	5.58	2,890	Jan. 3	Stevens and Kimble...	5.43	2,520
July 13	H. D. McGlashan.....	4.22	1,410	18	J. C. Stevens.....	10.45	11,300
Aug. 15	L. R. Allen.....	3.84	1,030	18	.....do.....	11.00	13,600
Sept. 26	Stevens and Post.....	3.60	877	20	Howard Kimble.....	14.10	19,900
Dec. 30	J. C. Stevens.....	5.97	2,920	July 20	Stevens and Hoyt.....	4.10	1,170

Daily gage height, in feet, of Clackamas River at Estacada, Oreg., for 1908-1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1908.							1908.						
1.....		6.65	6.18	5.00	3.70	3.95	16.....	6.18	6.42	5.70	4.22	3.85	4.00
2.....		6.52	6.38	4.90	3.70	3.90	17.....	6.80	6.22	5.48	4.15	3.90	3.75
3.....		6.35	6.10	4.80	3.70	3.85	18.....	8.42	6.70	5.55	4.10	3.85	3.70
4.....		6.20	6.00	4.75	3.65	3.80	19.....	8.62	6.75	5.88	4.00	3.90	3.65
5.....		6.20	5.92	4.60	3.72	3.78	20.....	8.15	6.50	5.72	4.00	3.92	3.60
6.....	5.55	6.18	5.85	4.52	3.75	3.75	21.....	7.55	6.30	5.80	4.00	3.88	3.68
7.....	5.45	6.42	6.05	4.42	3.75	3.75	22.....	7.02	6.08	5.65	3.95	3.88	3.60
8.....	5.38	6.25	5.95	4.38	3.65	3.95	23.....	6.70	6.18	5.45	3.92	3.75	3.65
9.....	5.48	6.15	6.35	4.35	3.62	3.85	24.....	8.65	6.02	5.32	3.90	3.75	3.62
10.....	5.50	5.82	6.22	4.35	3.62	3.80	25.....	8.15	6.28	5.22	3.90	3.90	3.55
11.....	5.60	5.98	6.15	4.25	3.58	3.80	26.....	7.32	5.90	5.20	3.40	3.85	3.55
12.....	6.20	5.72	6.10	4.20	3.65	3.78	27.....	7.00	5.80	5.38	3.85	3.80	3.62
13.....	6.20	5.62	5.85	4.20	3.65	3.52	28.....	6.62	5.98	5.15	3.88	4.05	3.75
14.....	6.18	5.68	5.65	4.48	3.70	3.75	29.....	6.45	6.02	5.02	3.82	4.28	3.60
15.....	6.25	6.00	5.75	4.22	3.60	3.75	30.....	6.45	6.02	5.02	3.90	3.82	3.55
							31.....		6.02		3.80	3.95	.....

Daily gage height, in feet, of Clackamas River at Estacada, Oreg., for 1908-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	3.62	5.60	4.90	5.4	5.7	6.6	7.0	6.2	7.4	4.38	4.2	3.7
2.....	3.80	5.10	4.80	5.52	5.7	7.25	6.7	6.35	7.25	4.48	4.15	4.0
3.....	3.60	4.98	4.75	5.52	6.0	7.05	6.5	6.85	7.1	4.5	4.0	4.05
4.....	3.58	4.55	4.78	6.4	5.8	6.85	6.18	7.35	6.65	4.45	4.1	3.75
5.....	3.60	4.60	4.80	6.78	5.85	6.52	6.15	6.82	6.4	4.28	4.1	3.55
6.....	3.62	4.30	4.18	6.3	5.9	6.25	5.92	6.42	6.15	5.05	4.15	3.5
7.....	3.62	4.30	4.80	6.05	5.5	6.0	5.7	6.15	5.95	5.05	4.2	3.6
8.....	3.68	4.02	4.78	5.85	5.75	6.0	5.75	6.05	5.9	4.55	4.25	3.65
9.....	3.65	4.20	4.65	5.6	5.5	6.0	5.85	6.0	5.8	4.7	3.95	3.9
10.....	3.45	4.00	4.55	5.25	5.32	5.88	5.9	6.0	5.85	4.5	4.05	4.2
11.....	3.50	4.10	4.60	5.3	5.35	5.72	5.82	6.28	5.8	4.25	4.15	4.0
12.....	3.65	4.10	5.00	5.25	5.32	5.6	5.9	6.15	5.75	4.3	4.2	3.95
13.....	3.90	4.20	5.50	5.4	5.38	5.62	5.8	6.0	5.48	4.45	3.95	4.0
14.....	5.15	4.25	5.42	5.6	5.1	5.4	5.9	6.0	5.35	4.4	4.0	3.95
15.....	5.22	3.60	5.20	7.25	6.05	5.65	5.9	5.95	5.35	4.3	3.95	3.72
16.....	4.60	4.10	4.92	10.2	8.0	5.8	5.8	5.9	5.35	4.3	4.0	4.0
17.....	4.45	4.05	4.88	9.85	9.85	6.06	5.9	6.0	5.3	4.25	4.0	3.95
18.....	4.20	4.90	4.80	11.45	9.25	6.0	5.7	5.85	5.25	4.25	3.9	4.2
19.....	4.45	5.00	4.55	13.5	8.45	5.7	5.6	5.85	5.2	4.1	3.95	3.55
20.....	5.22	5.30	4.35	15.05	7.65	5.8	5.5	5.95	5.05	4.1	4.05	3.75
21.....	4.55	5.95	4.75	13.26	6.9	5.5	5.52	5.8	5.05	4.0	3.95	4.3
22.....	4.35	7.30	4.65	10.6	6.5	5.65	5.58	5.7	4.82	4.25	3.9	4.35
23.....	4.40	7.00	4.90	9.0	6.25	5.5	5.45	5.75	4.9	4.15	3.7	4.05
24.....	4.28	6.40	5.15	7.85	6.75	5.5	5.55	5.8	4.7	4.2	3.8	3.95
25.....	4.20	5.90	5.45	7.35	6.85	5.45	5.55	5.75	4.75	4.15	3.95	3.95
26.....	4.38	5.30	6.10	6.88	6.65	5.6	6.1	5.95	4.75	4.45	3.85	3.65
27.....	4.30	5.25	5.80	6.62	6.5	5.75	7.45	6.45	4.5	4.4	4.05	3.7
28.....	4.25	5.00	6.55	6.2	6.35	5.65	7.5	6.45	4.55	4.25	3.95	4.1
29.....	4.30	4.78	6.65	6.05	6.05	6.05	6.75	6.5	4.55	4.05	3.8	4.2
30.....	4.85	4.98	6.12	5.95	5.95	5.95	6.52	6.75	4.58	4.25	3.85	4.25
31.....	6.50	5.80	5.7	5.7	6.0	6.0	7.05	7.05	4.15	4.15	3.95	4.25
1909-10.												
1.....	4.2	5.9	8.75	6.05	6.2	13.2	6.15	6.00	5.08	4.20	4.25	3.75
2.....	4.05	10.0	8.05	5.65	6.05	14.3	6.45	6.10	5.05	4.50	4.15	3.95
3.....	4.05	8.9	7.35	5.15	5.95	12.25	6.6	6.60	5.00	4.30	4.20	4.05
4.....	4.05	7.55	6.85	5.05	5.85	10.65	6.65	6.60	4.90	4.20	4.25	3.95
5.....	4.05	6.8	6.7	4.95	5.9	9.75	6.5	6.50	4.80	4.15	4.20	4.00
6.....	3.9	6.3	6.65	5.0	5.65	8.75	6.6	6.50	4.85	4.45	4.20	4.40
7.....	3.85	5.95	6.35	5.1	5.75	8.10	6.7	6.30	4.90	4.35	4.25	4.05
8.....	3.95	6.4	6.35	5.05	5.55	7.60	6.95	6.25	4.80	4.35	4.30	4.10
9.....	3.95	6.4	6.4	4.85	5.45	7.45	7.0	6.22	4.60	4.15	4.40	3.85
10.....	3.8	6.45	6.2	4.9	5.65	7.25	7.0	6.72	4.75	4.25	4.40	4.08
11.....	4.0	6.3	6.6	4.95	5.6	7.35	6.95	6.70	5.30	4.45	4.45	3.30
12.....	3.95	6.1	8.75	5.05	5.45	7.40	7.0	6.50	5.75	4.60	4.25	3.75
13.....	3.75	5.7	10.0	4.85	6.35	8.15	6.95	6.22	4.98	4.32	4.00	3.95
14.....	3.8	5.2	8.4	4.9	6.3	8.50	6.55	6.00	4.60	3.95	3.90	3.90
15.....	3.75	5.05	7.5	4.85	5.85	8.55	6.3	5.90	4.35	4.20	3.65	3.90
16.....	3.95	5.25	7.1	5.0	5.75	8.50	6.35	5.90	4.45	4.10	4.15	4.20
17.....	3.95	5.3	6.7	4.8	5.75	8.35	6.4	5.52	4.60	4.00	4.15	3.95
18.....	4.05	8.15	6.2	5.05	6.0	8.20	6.55	5.35	4.65	4.40	4.32	3.45
19.....	4.25	11.5	6.1	5.7	6.05	8.60	6.95	5.65	4.60	4.15	4.20	3.95
20.....	4.6	13.75	6.05	5.7	5.85	6.20	7.1	5.30	4.55	4.10	4.28	3.95
21.....	4.65	9.35	6.25	5.8	5.85	7.90	6.95	5.30	4.52	4.05	4.20	4.10
22.....	4.55	18.95	6.0	5.85	5.75	7.85	6.75	5.20	4.55	4.20	4.15	4.20
23.....	4.45	16.1	5.95	7.85	5.85	7.85	7.0	5.20	4.60	4.05	4.20	3.85
24.....	4.1	17.1	5.5	9.85	7.25	7.30	7.2	5.25	4.60	4.25	4.15	3.90
25.....	4.15	11.2	5.55	8.5	8.9	6.95	7.2	5.25	4.50	4.35	4.10	3.45
26.....	4.25	8.9	5.45	7.15	7.65	6.85	6.95	5.20	4.30	4.28	4.10	4.05
27.....	4.15	8.05	5.45	7.25	8.4	6.45	6.65	5.20	4.35	4.25	3.90	4.05
28.....	4.25	8.35	5.35	7.65	9.85	6.45	6.4	5.10	4.65	4.22	4.00	4.15
29.....	4.55	8.7	5.45	7.15	.....	6.15	6.2	4.95	4.25	4.28	3.90	4.30
30.....	4.4	10.95	5.75	6.95	.....	6.20	6.2	5.10	4.55	4.20	3.90	4.00
31.....	4.8	.....	5.85	6.65	.....	6.05	.....	5.10	.....	3.75	4.00	.....

NOTE.—Gage readings, although correct for the time at which they were made, represent only approximately the daily mean on account of fluctuations caused by the operation of the power plant above.

Daily discharge, in second-feet, of Clackamas River at Estacada, Oreg., for 1908-1910.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1908.							1908.						
1.....		4,380	3,660	2,160	936	1,140	16.....	3,660	4,020	3,000	1,370	1,060	1,180
2.....		4,170	3,960	2,060	936	1,100	17.....	4,620	3,720	2,720	1,310	1,100	976
3.....		3,920	3,540	1,950	936	1,060	18.....	7,540	4,160	2,800	1,260	1,060	936
4.....		3,690	3,400	1,900	900	1,020	19.....	7,940	4,540	3,230	1,180	1,100	900
5.....		3,690	3,290	1,740	952	999	20.....	7,000	4,140	3,030	1,180	1,110	864
6.....	2,800	3,660	3,200	1,660	976	976	21.....	5,890	3,840	3,130	1,180	1,080	922
7.....	2,680	4,020	3,470	1,500	976	976	22.....	4,970	3,510	2,940	1,140	1,080	864
8.....	2,600	3,760	3,330	1,520	900	1,140	23.....	4,460	3,660	2,680	1,110	976	900
9.....	2,720	3,620	3,920	1,490	878	1,060	24.....	8,000	3,430	2,520	1,100	976	878
10.....	2,740	3,160	3,720	1,490	878	1,020	25.....	7,000	3,810	2,410	1,100	1,100	830
11.....	2,870	3,370	3,620	1,400	850	1,020	26.....	5,480	3,260	2,380	733	1,060	830
12.....	3,690	3,030	3,540	1,360	900	900	27.....	4,940	3,130	2,600	1,060	1,020	878
13.....	3,690	2,900	3,200	1,360	900	810	28.....	4,330	3,370	2,330	1,080	1,220	976
14.....	3,660	2,970	2,940	1,620	936	976	29.....	4,060	3,430	2,180	1,030	1,430	864
15.....	3,760	3,400	3,060	1,370	864	976	30.....	4,060	3,430	2,180	1,100	1,030	830
							31.....		3,430		1,020	1,140	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	878	2,870	2,060	2,390	2,720	3,950	4,600	3,360	5,280	1,410	1,260	910
2.....	1,020	2,270	1,950	2,520	2,720	5,020	4,100	3,580	5,020	1,490	1,220	1,110
3.....	864	2,140	1,900	2,520	3,100	4,680	3,800	4,350	4,770	1,510	1,110	1,150
4.....	850	1,690	1,930	3,650	2,840	4,350	3,340	5,200	4,030	1,470	1,180	943
5.....	864	1,740	1,950	4,230	2,910	3,830	3,300	4,300	3,650	1,320	1,180	814
6.....	878	1,440	1,340	3,500	2,970	3,440	3,000	3,680	3,300	2,030	1,220	782
7.....	878	1,440	1,950	3,160	2,500	3,100	2,720	3,300	3,040	2,030	1,260	846
8.....	922	1,200	1,930	2,910	2,780	3,100	2,780	3,160	2,970	1,560	1,300	878
9.....	900	1,360	1,790	2,610	2,500	3,100	2,910	3,100	2,840	1,690	1,080	1,040
10.....	764	1,180	1,690	2,230	2,310	2,940	2,970	3,100	2,910	1,510	1,150	1,260
11.....	796	1,260	1,740	2,290	2,340	2,750	2,870	3,480	2,840	1,300	1,220	1,110
12.....	900	1,260	2,160	2,230	2,310	2,610	2,970	3,300	2,780	1,340	1,260	1,080
13.....	1,100	1,360	2,740	2,390	2,370	2,840	3,100	2,480	2,180	1,470	1,080	1,110
14.....	2,330	1,400	2,640	2,610	2,080	2,390	2,970	3,100	2,340	1,420	1,110	1,080
15.....	2,410	864	2,380	5,020	3,160	2,670	2,970	3,040	2,340	1,340	1,080	910
16.....	1,740	1,260	2,080	10,700	6,340	2,840	2,840	2,970	2,340	1,340	1,110	1,110
17.....	1,590	1,220	2,030	8,950	9,980	3,180	2,970	3,100	2,290	1,300	1,110	1,080
18.....	1,360	2,060	1,950	13,500	8,750	3,100	2,720	2,910	2,230	1,300	1,040	1,260
19.....	1,590	2,160	1,690	18,400	7,180	2,720	2,610	2,910	2,180	1,180	1,080	814
20.....	2,410	2,500	1,490	22,400	5,720	2,840	2,500	3,040	2,030	1,180	1,150	943
21.....	1,690	3,330	1,900	17,800	4,430	2,500	2,520	2,840	2,030	1,110	1,080	1,340
22.....	1,490	5,450	1,790	11,600	3,800	2,670	2,590	2,720	1,810	1,300	1,040	1,380
23.....	1,540	4,940	2,060	8,250	3,440	2,500	2,450	2,780	1,880	1,220	910	1,150
24.....	1,430	3,990	2,330	6,070	4,180	2,500	2,560	2,840	1,690	1,260	980	1,080
25.....	1,360	3,260	2,680	5,200	4,350	2,450	2,560	2,780	1,740	1,220	1,080	1,080
26.....	1,520	2,500	3,540	4,400	4,030	2,610	3,230	3,040	1,740	1,470	1,010	878
27.....	1,440	2,440	3,130	3,830	3,800	2,780	5,370	3,720	1,510	1,420	1,150	910
28.....	1,400	2,160	4,220	3,360	3,580	2,670	5,460	3,720	1,560	1,300	1,080	1,180
29.....	1,440	1,930	4,380	3,160			3,160	4,180	3,800	1,560	1,150	976
30.....	2,000	2,140	3,570	3,040			3,040	3,530	4,180	1,580	1,300	1,010
31.....	4,140		3,130	2,720			3,100		4,680		1,220	1,080

Daily discharge, in second-feet, of Clackamas River at Estacada, Oreg., for 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	1,260	2,970	7,760	3,270	3,480	17,900	3,410	3,200	2,140	1,320	1,360	985
2	1,150	10,300	6,430	2,090	3,270	20,500	3,840	3,340	2,090	1,570	1,280	1,120
3	1,150	8,050	5,200	2,200	3,140	15,600	4,070	4,070	2,040	1,400	1,320	1,200
4	1,150	5,540	4,350	2,090	3,000	11,800	4,140	4,070	1,940	1,320	1,360	1,120
5	1,150	4,260	4,100	1,990	3,070	9,880	3,920	3,920	1,840	1,280	1,320	1,160
6	1,040	3,500	4,030	2,040	2,760	7,880	4,070	3,920	1,890	1,520	1,320	1,480
7	1,010	3,040	3,580	2,140	2,880	6,650	4,220	3,620	1,940	1,440	1,360	1,200
8	1,080	3,650	3,580	2,090	2,640	5,730	4,620	3,550	1,840	1,440	1,400	1,240
9	1,080	3,650	3,650	1,820	2,520	5,460	4,700	3,480	1,660	1,280	1,480	1,060
10	976	3,720	3,360	1,940	2,760	5,120	4,700	4,220	1,800	1,360	1,480	1,240
11	1,110	3,500	3,950	1,990	2,700	5,280	4,620	4,220	2,360	1,520	1,520	720
12	1,080	3,230	7,760	2,090	2,520	5,370	4,700	3,920	2,580	1,660	1,360	985
13	943	2,720	10,300	1,890	3,700	6,740	4,620	3,480	2,040	1,400	1,160	1,120
14	976	2,780	7,080	1,940	3,620	7,410	4,000	3,200	1,660	1,120	1,090	1,090
15	943	2,030	5,460	1,890	3,000	7,500	3,620	3,070	1,440	1,320	915	1,090
16	1,080	2,230	4,770	2,040	2,880	7,410	3,700	3,070	1,520	1,240	1,280	1,320
17	1,080	2,290	4,100	1,840	2,880	7,120	3,770	2,580	1,660	1,160	1,280	1,120
18	1,150	6,620	3,360	2,090	3,200	6,840	4,000	2,420	1,700	1,480	1,400	795
19	1,300	13,600	3,230	2,820	3,270	7,600	4,620	2,760	1,660	1,280	1,320	1,120
20	1,600	19,100	3,160	2,820	3,000	3,480	4,860	2,360	1,620	1,240	1,400	1,120
21	1,650	8,950	3,440	2,940	3,000	6,270	4,620	2,360	1,570	1,200	1,320	1,240
22	1,560	33,000	3,100	3,000	2,880	6,180	4,300	2,250	1,620	1,320	1,280	1,320
23	1,470	25,200	3,040	6,180	3,000	6,180	4,700	2,250	1,660	1,200	1,320	1,060
24	1,180	27,900	2,500	10,100	5,120	5,200	5,030	2,300	1,660	1,360	1,280	1,090
25	1,220	13,000	2,560	7,410	8,180	4,620	5,030	2,300	1,570	1,440	1,240	795
26	1,300	8,050	2,450	4,940	5,820	4,460	4,620	2,250	1,400	1,400	1,240	1,200
27	1,220	6,430	2,450	5,120	7,220	3,840	4,140	2,250	1,440	1,400	1,090	1,200
28	1,300	6,990	2,340	5,820	10,100	3,840	3,770	2,140	1,700	1,320	1,160	1,280
29	1,560	7,660	2,450	4,940	.....	3,410	3,480	1,990	1,360	1,400	1,090	1,400
30	1,420	12,400	2,780	4,620	.....	3,480	3,480	2,140	1,620	1,320	1,090	1,160
31	1,790	.....	2,910	4,140	.....	3,270	.....	2,140	.....	985	1,160	.....

NOTE.—Daily discharge determined from three rating curves, applicable as follows: 1908, well defined; 1909, well defined between 800 and 20,000 second-feet; 1910, well defined. The accuracy of the determinations depends chiefly on the accuracy of the gage heights.

Monthly discharge of Clackamas River at Estacada, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908.					
April 6-30	8,000	2,600	4,610	228,000	A.
May	4,540	2,900	3,640	224,000	A.
June	3,960	2,180	3,070	183,000	A.
July	2,160	733	1,370	84,200	A.
August	1,430	850	1,010	62,100	B.
September	1,180	810	963	57,300	B.
The period	.....	.....	.....	839,000	.....
1908-9.					
October	4,140	764	1,440	88,500	B.
November	5,450	864	2,160	129,000	A.
December	4,380	1,340	2,330	143,000	A.
January	22,400	2,290	6,050	372,000	B.
February	9,980	2,080	3,900	217,000	A.
March	5,020	2,390	3,070	189,000	A.
April	5,460	2,450	3,220	192,000	A.
May	4,680	2,720	3,390	208,000	A.
June	5,280	1,510	2,630	156,000	A.
July	2,030	1,110	1,390	85,500	A.
August	1,300	910	1,120	68,900	B.
September	1,380	814	1,060	63,100	B.
The year	22,400	764	2,650	1,910,000	.....

Monthly discharge of Clackamas River at Estacada, Oreg., for 1908-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....	1,790	943	1,230	75,600	C.
November.....	33,000	2,030	8,530	508,000	B.
December.....	10,300	2,340	4,170	256,000	B.
January.....	10,100	1,840	3,300	203,000	B.
February.....	10,100	2,520	3,770	209,000	B.
March.....	20,500	3,270	7,160	440,000	C.
April.....	5,030	3,410	4,250	253,000	C.
May.....	4,220	1,990	2,990	184,000	C.
June.....	2,140	1,360	1,780	106,000	C.
July.....	1,660	985	1,340	82,400	C.
August.....	1,520	915	1,240	78,700	D.
September.....	1,480	720	1,130	67,200	D.
The year.....	33,000	720	3,410	2,460,000	

NOTE.—Accuracy ratings for 1909 and 1910 are based on comparison of these records with those above Cazadero, which are assumed to be correct.

CLACKAMAS RIVER NEAR BARTON, OREG.

Location.—In sec. 20, T. 2 S., R. 3 E., 3 miles below Barton, 1½ miles below mouth of Deep Creek.

Records available.—November 11, 1905, to December 31, 1908.

Drainage area.—800 square miles.

Gage.—Staff in two sections; lower section inclined, upper vertical.

Discharge measurements.—Made from cable.

Winter flow.—Records not affected by ice.

Accuracy.—Records good except for flood stages.

Discharge measurements of Clackamas River near Barton, Oreg., in 1905-1908.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Fect.</i>	<i>Sec.-ft.</i>	1906.		<i>Fect.</i>	<i>Sec.-ft.</i>
Oct. 2	L. R. Allen.....	3.30	1,600	May 23	L. R. Allen.....	4.30	3,250
				July 10	do.....	3.01	1,270
1906.				Sept. 3	Ivan Oakes.....	2.51	817
Jan. 8	L. R. Allen.....	4.52	3,310				
13	do.....	4.84	4,020	1908.			
Apr. 2	do.....	5.18	4,950	Sept. 26 ^a	Stevens and Post.....	2.61	816

^a Measured from a boat.

Daily gage height, in feet, of Clackamas River near Barton, Oreg., for 1905-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1			4.23	4.4	5.6	5.6	5.9	4.9	3.8	3.4	2.7	2.52
2			5.47	4.3	5.4	5.3	5.3	4.7	3.8	3.4	2.7	2.52
3			5.3	4.1	5.2	5.3	4.9	4.5	3.8	3.3	2.7	2.52
4			5.1	4.1	4.9	5.1	4.7	4.5	4.1	3.2	2.7	2.52
5			4.8	4.36	4.7	5.0	4.7	4.4	4.0	3.2	2.7	2.52
6			4.8	4.45	4.5	5.0	4.8	4.3	4.2	3.1	2.65	2.51
7			4.9	4.52	4.4	5.0	5.0	4.2	4.5	3.1	2.65	2.51
8			5.13	4.5	4.2	5.1	5.1	4.2	4.3	3.1	2.65	2.51
9			4.8	4.9	4.1	5.3	5.5	4.2	4.5	3.0	2.6	2.51
10			4.5	4.9	4.0	5.4	5.3	4.2	4.2	3.0	2.6	2.51
11		3.1	4.3	4.9	3.9	5.2	5.0	4.1	4.2	3.0	2.6	2.51
12		3.0	4.12	4.9	3.8	4.8	4.7	4.1	4.1	3.0	2.6	2.54
13		3.0	4.0	4.9	3.8	4.6	4.6	3.9	4.1	3.0	2.6	2.8
14		3.0	3.9	4.7	3.7	4.5	4.6	3.8	4.0	3.0	2.6	3.3
15		3.0	3.8	4.6	3.8	4.4	4.6	4.3	4.0	3.0	2.6	4.1
16		3.0	3.8	4.6	3.9	4.1	4.7	4.2	5.3	3.0	2.6	3.3
17		2.9	4.6	4.9	4.0	4.1	4.7	4.0	5.0	3.0	2.6	3.0
18		3.1	5.3	5.1	5.8	4.0	4.5	4.0	4.7	3.0	2.6	2.8
19		3.62	5.25	4.75	8.2	3.9	4.5	3.9	4.5	3.0	2.6	2.75
20		4.7	5.2	4.5	7.1	3.9	4.5	4.0	4.2	3.0	2.55	2.7
21		4.1	4.8	4.3	8.0	3.9	4.9	4.2	3.9	3.0	2.55	2.65
22		3.82	4.6	4.2	7.0	3.8	4.8	4.3	3.9	3.0	2.55	2.65
23		3.7	4.33	4.7	6.4	3.8	4.8	4.3	3.7	3.0	2.55	2.65
24		3.5	4.1	7.2	6.1	3.9	4.7	4.2	3.6	2.9	2.55	2.65
25		3.55	4.0	6.7	6.4	3.9	4.9	4.2	3.5	2.8	2.55	2.65
26		3.8	5.1	6.0	6.1	4.2	5.3	4.3	3.5	2.8	2.55	2.64
27		4.33	5.05	5.6	6.8	4.2	4.9	4.3	3.4	2.7	2.55	2.63
28		4.1	4.75	5.3	6.1	4.2	5.1	4.2	3.5	2.7	2.55	2.62
29		4.1	4.55	5.2		4.2	5.1	4.0	3.5	2.7	2.54	2.61
30		4.19	4.5	5.3		4.4	5.0	4.0	3.6	2.7	2.53	2.6
31			4.8	5.6		5.7		3.9		2.7	2.53	
1906-7.												
1	2.6	3.2	4.5	5.7	10.2	5.1	4.8	4.6	3.8	3.3	2.8	2.5
2	2.7	3.1	4.5	5.6	8.1	5.0	4.8	4.5	3.7	3.3	3.1	2.5
3	2.8	3.1	4.5	5.8	7.8	4.9	4.6	4.4	3.7	3.7	2.9	2.6
4	3.0	3.2	4.4	10.45	12.55	4.7	4.5	4.5	3.8	3.2	2.8	2.6
5	2.9	3.7	4.4	9.15	16.5	4.6	4.7	4.6	3.7	3.2	2.8	2.5
6	2.8	3.5	4.6	7.2	14.0	4.5	5.2	4.5	3.7	3.2	2.7	2.5
7	2.7	7.15	6.0	7.0	11.0	4.5	9.75	4.5	3.6	3.2	2.8	2.5
8	2.7	10.0	6.5	6.1	10.0	4.4	9.2	4.5	3.5	3.1	2.9	2.5
9	2.7	7.0	6.0	5.6	9.0	4.4	7.6	4.7	3.4	3.1	2.9	2.5
10	2.6	6.3	5.7	5.4	8.0	4.5	8.1	4.9	3.5	3.1	2.9	2.6
11	2.6	6.6	5.6	5.3	7.0	4.6	7.0	4.8	3.5	3.3	2.9	2.6
12	2.7	5.7	5.3	5.2	6.5	4.5	6.3	4.8	3.7	3.3	2.8	2.6
13	2.8	10.1	5.1	5.1	6.3	4.5	6.0	4.6	3.8	3.2	2.8	2.5
14	3.1	10.6	5.0	4.7	6.0	4.5	6.0	4.5	3.8	3.2	2.7	2.5
15	3.1	11.9	4.9	4.7	5.7	4.4	5.8	4.6	3.7	3.2	2.6	2.5
16	4.3	10.7	6.6	4.7	5.5	4.2	5.6	4.7	3.7	3.1	2.6	2.5
17	4.6	10.5	6.1	4.5	5.4	4.2	5.5	4.6	3.8	3.1	2.5	3.1
18	4.7	8.6	5.7	4.5	5.2	4.9	5.6	4.6	3.7	3.0	2.5	2.9
19	4.4	7.0	5.9	4.6	5.0	4.8	7.8	4.5	3.6	2.9	2.5	2.7
20	4.0	6.5	11.0	4.6	5.1	4.8	7.2	4.5	3.5	3.0	2.6	2.6
21	3.7	6.5	11.0	4.6	5.1	4.9	6.2	4.5	3.5	3.0	2.6	2.5
22	3.5	6.2	9.0	4.5	5.1	4.6	5.9	4.4	3.6	2.9	2.6	2.5
23	3.4	6.0	7.0	4.6	5.1	4.7	5.7	4.3	3.7	2.9	2.5	2.5
24	3.3	5.8	6.5	4.6	5.5	4.6	5.5	4.2	3.7	2.9	2.5	2.5
25	3.2	5.3	7.0	4.6	5.7	4.6	5.3	4.2	3.6	2.8	2.9	2.5
26	3.3	5.1	7.5	4.5	5.5	4.3	5.0	3.9	3.5	2.8	2.8	2.6
27	3.4	4.9	7.5	4.5	5.3	4.3	4.9	4.0	3.5	3.0	2.6	2.6
28	3.5	4.8	6.8	5.2	5.1	4.2	4.8	4.1	3.4	2.9	2.6	2.9
29	3.4	4.7	6.2	7.0		4.2	4.7	3.8	3.4	2.9	2.5	2.7
30	3.2	4.6	6.1	7.7		4.4	4.6	4.0	3.4	3.0	2.5	2.5
31	3.2		5.9	9.0		4.5		4.0		2.9	2.5	

Daily gage height, in feet, of Clackamas River near Barton, Oreg., for 1905-1908—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July	Aug.	Sept.
1907-8.												
1.....	3.0	2.5	4.6	5.4	3.9	4.1	4.9	5.1	5.1	3.8	2.9	2.7
2.....	2.7	3.0	4.3	5.2	3.7	4.1	5.0	5.2	5.0	3.8	2.8	2.7
3.....	2.8	2.7	4.3	5.1	3.5	4.0	5.0	5.0	4.7	3.7	2.8	2.7
4.....	2.6	2.9	4.0	5.0	3.8	4.0	4.9	4.9	4.7	3.7	2.8	2.8
5.....	2.4	2.3	4.1	5.0	3.9	4.0	4.8	4.6	4.8	3.6	2.7	2.8
6.....	2.5	2.4	4.1	5.2	5.4	3.9	4.8	4.9	4.6	3.5	2.7	2.8
7.....	2.5	2.4	4.4	5.1	5.4	3.8	4.5	.....	4.8	3.5	2.7	2.8
8.....	2.6	2.4	4.8	4.9	5.0	3.7	4.4	.....	4.8	3.4	2.7	2.7
9.....	2.6	2.3	5.0	6.1	4.7	3.7	4.4	.....	4.9	3.4	2.6	2.7
10.....	2.5	2.3	5.0	5.7	4.5	3.7	4.5	.....	4.9	3.3	2.6	2.6
11.....	2.5	2.3	5.2	6.1	4.3	3.8	4.5	.....	4.8	3.3	2.7	2.6
12.....	2.5	2.4	5.6	5.8	4.1	3.9	4.6	.....	4.7	3.3	2.8	2.6
13.....	2.5	2.3	9.5	5.5	4.0	4.5	4.6	.....	4.6	3.3	2.8	2.5
14.....	2.5	2.2	7.5	5.3	4.2	5.8	4.6	.....	4.4	3.4	2.9	2.5
15.....	2.4	2.2	6.0	5.0	4.0	14.0	4.7	.....	4.3	3.3	2.8	2.6
16.....	2.3	2.2	5.5	4.8	4.0	13.0	4.7	.....	4.2	3.3	2.7	2.6
17.....	2.4	2.2	4.9	5.2	4.1	9.8	4.9	.....	4.2	3.2	2.7	2.5
18.....	2.3	2.3	4.7	5.0	4.3	8.0	6.5	.....	4.4	3.2	2.7	2.5
19.....	2.3	2.5	4.4	5.1	4.3	6.9	7.3	.....	4.6	3.1	2.7	2.4
20.....	2.3	3.4	4.6	6.7	4.2	6.2	6.8	.....	4.6	3.1	2.7	2.4
21.....	2.5	3.7	4.8	6.1	3.9	5.8	6.2	.....	4.5	3.1	2.6	2.5
22.....	2.4	4.0	11.5	5.6	3.8	5.3	5.8	.....	4.4	3.1	2.5	2.4
23.....	2.4	4.8	11.4	5.3	3.7	5.0	5.8	.....	4.4	3.0	2.5	2.4
24.....	2.4	8.5	11.2	5.0	4.0	5.2	6.7	.....	4.3	3.0	2.6	2.4
25.....	2.4	10.6	9.0	4.6	4.0	5.4	6.5	.....	4.2	3.0	3.1	2.5
26.....	2.3	8.2	11.95	4.4	3.9	5.2	6.3	.....	4.1	3.0	2.8	2.5
27.....	2.3	6.3	10.5	3.9	4.0	5.2	5.7	.....	4.1	3.0	2.6	2.9
28.....	2.4	5.7	8.0	4.4	4.0	4.9	5.5	.....	4.1	3.0	2.7	2.8
29.....	2.4	5.4	6.7	4.1	3.9	4.7	5.3	.....	4.0	3.0	3.1	2.7
30.....	2.6	5.0	6.1	4.3	.....	5.1	5.1	.....	3.9	2.9	3.0	2.7
31.....	2.5	.....	5.9	3.9	.....	4.9	.....	.....	.....	2.9	2.8	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1908.											
1.....	2.6	4.4	3.3	11.....	2.7	2.8	3.0	21.....	3.7	4.3	3.5
2.....	2.7	4.4	3.1	12.....	2.7	2.7	3.2	22.....	3.4	5.2	3.4
3.....	2.8	4.3	3.1	13.....	2.9	2.7	4.3	23.....	3.4	6.6	3.2
4.....	2.9	3.8	3.0	14.....	3.0	2.7	3.5	24.....	3.1	5.8	4.0
5.....	2.3	3.4	3.0	15.....	4.1	2.6	3.8	25.....	3.2	5.1	3.8
6.....	2.4	3.2	2.8	16.....	3.6	2.7	3.7	26.....	3.1	4.0	5.7
7.....	2.6	3.1	2.8	17.....	3.4	2.7	3.6	27.....	3.0	3.9	4.9
8.....	2.6	3.0	3.0	18.....	3.3	3.1	3.5	28.....	3.0	3.8	5.0
9.....	2.7	2.9	2.9	19.....	3.1	3.8	3.6	29.....	3.1	3.8	5.8
10.....	2.7	2.9	2.8	20.....	4.1	3.7	3.4	30.....	3.2	3.5	5.1
								31.....	5.6	.....	4.7

Daily discharge, in second-feet, of Clackamas River near Barton, Oreg., for 1905-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1			3,000	3,300	5,790	5,790	6,510	4,250	2,290	1,730	970	826
2			5,490	3,120	5,330	5,110	5,110	3,860	2,290	1,730	970	826
3			5,110	2,780	4,890	5,110	4,250	3,480	2,290	1,600	970	826
4			4,670	2,780	4,250	4,670	3,860	3,480	2,780	1,480	970	826
5			4,050	3,230	3,860	4,460	3,860	3,300	2,610	1,480	970	826
6			4,050	3,390	3,480	4,460	4,050	3,120	2,950	1,370	930	818
7			4,250	3,300	3,300	4,460	4,460	2,950	3,480	1,370	930	818
8			4,740	3,480	2,950	4,670	4,670	2,950	3,120	1,370	930	818
9			4,050	4,250	2,780	5,110	5,560	2,950	3,480	1,260	890	818
10			3,480	4,250	2,610	5,330	5,110	2,950	2,950	1,260	890	818
11		1,370	3,120	4,250	2,450	4,890	4,460	2,780	2,950	1,260	890	818
12		1,260	2,810	4,250	2,290	4,050	3,860	2,780	2,780	1,260	890	842
13		1,260	2,610	4,250	2,290	3,670	3,670	2,450	2,780	1,260	890	1,060
14		1,260	2,450	3,860	2,140	3,480	3,670	2,290	2,610	1,260	890	1,060
15		1,260	2,290	3,670	2,290	3,300	3,670	3,120	2,610	1,260	890	2,780
16		1,260	2,290	3,670	2,450	2,780	3,860	2,950	5,110	1,260	890	1,600
17		1,160	3,670	4,250	2,610	2,780	3,860	2,610	4,460	1,260	890	1,260
18		1,370	5,110	4,670	6,270	2,610	3,480	2,610	3,860	1,260	890	1,060
19		2,030	5,000	3,950	13,000	2,450	3,480	2,450	3,480	1,260	890	1,010
20		3,860	4,890	3,480	9,750	2,450	3,480	2,610	2,950	1,260	850	970
21		2,780	4,050	3,120	12,400	2,450	4,250	2,950	2,450	1,260	850	930
22		2,320	3,670	2,950	9,460	2,290	4,050	3,120	2,450	1,260	850	930
23		2,140	3,170	3,860	7,790	2,290	4,050	3,120	2,140	1,260	850	930
24		1,860	2,780	10,000	7,010	2,450	3,860	2,950	2,000	1,160	850	930
25		1,930	2,610	8,610	7,790	2,450	4,250	2,950	1,860	1,060	850	930
26		2,290	4,670	6,760	7,010	2,950	5,110	3,120	1,860	1,060	850	922
27		3,170	4,560	5,790	8,890	2,950	4,250	3,120	1,730	970	850	914
28		2,780	3,960	5,110	7,010	2,950	4,670	2,950	1,860	970	850	906
29		2,780	3,580	4,890	-----	2,950	4,670	2,610	1,860	970	842	898
30		2,930	3,480	5,110	-----	3,300	4,460	2,610	2,000	970	834	890
31		-----	4,050	5,790	-----	6,030	-----	2,450	-----	970	834	-----
1906-7												
1	890	1,480	3,480	6,030	19,400	4,670	4,050	3,670	2,290	1,600	1,060	810
2	970	1,370	3,480	5,790	12,700	4,460	4,050	3,480	2,140	1,600	1,370	810
3	1,060	1,370	3,480	6,270	11,800	4,250	3,670	3,300	2,140	1,600	1,160	890
4	1,260	1,480	3,300	20,200	27,300	3,860	3,480	3,480	2,290	1,480	1,060	890
5	1,160	2,140	3,300	16,000	42,000	3,670	3,860	3,670	2,140	1,480	1,060	810
6	1,060	1,860	3,670	10,000	32,500	3,480	4,890	3,480	2,140	1,480	970	810
7	970	9,900	6,760	9,460	22,000	3,480	17,900	3,480	2,000	1,480	1,060	810
8	970	18,700	8,060	7,010	18,700	3,300	16,200	3,480	1,860	1,370	1,160	810
9	970	9,460	6,760	5,790	15,500	3,300	11,200	3,860	1,730	1,370	1,160	810
10	890	7,530	6,030	5,330	12,400	3,480	12,700	4,250	1,860	1,370	1,160	890
11	890	8,330	5,790	5,110	9,460	3,670	9,460	4,050	1,860	1,000	1,160	890
12	970	6,030	5,110	4,890	8,060	3,480	7,530	4,050	2,140	1,600	1,060	890
13	1,060	19,100	4,670	4,670	7,530	3,480	6,760	3,670	2,290	1,480	1,060	810
14	1,370	20,700	4,460	3,860	6,760	3,480	6,760	3,480	2,290	1,480	970	810
15	1,370	25,100	4,250	3,860	6,030	3,300	6,270	3,670	2,140	1,480	890	810
16	3,120	21,000	8,330	3,860	5,560	2,950	5,790	3,860	2,140	1,370	890	810
17	3,670	20,400	7,010	3,480	5,330	2,950	5,560	3,670	2,290	1,370	810	1,370
18	3,860	14,300	6,030	3,480	4,890	4,250	5,790	3,670	2,140	1,260	810	1,160
19	3,300	9,460	6,510	3,670	4,460	4,050	11,800	3,480	2,000	1,160	810	970
20	2,610	8,060	22,000	3,670	4,670	4,050	10,000	3,480	1,860	1,260	890	890
21	2,140	8,060	22,000	3,670	4,670	4,250	7,270	3,480	1,860	1,260	890	810
22	1,860	7,270	15,500	3,480	4,670	3,670	6,510	3,300	2,000	1,160	890	810
23	1,730	6,760	9,460	3,670	4,670	3,860	6,030	3,120	2,140	1,160	810	810
24	1,600	6,270	8,060	3,670	5,560	3,670	5,560	2,950	2,140	1,160	810	810
25	1,480	5,110	9,460	3,670	6,030	3,670	5,110	2,950	2,000	1,060	1,160	810
26	1,600	4,670	10,900	3,480	5,560	3,120	4,460	2,950	1,860	1,060	1,060	890
27	1,730	4,250	10,900	3,480	5,110	3,120	4,250	2,610	1,860	1,260	890	890
28	1,860	4,050	8,890	4,890	4,670	2,950	4,050	2,780	1,730	1,160	890	1,160
29	1,730	3,860	7,270	9,460	-----	2,950	3,860	2,290	1,730	1,160	810	970
30	1,480	3,670	7,010	11,500	-----	3,300	3,670	2,610	1,730	1,260	810	810
31	1,480	-----	6,510	15,500	-----	3,480	-----	2,610	-----	1,160	810	-----

Daily discharge, in second-feet, of Clackamas River near Barton, Oreg., for 1905-1908—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1,260	810	3,670	5,330	2,450	2,780	4,250	4,670	4,670	2,290	1,100	900
2.....	970	1,260	3,120	4,890	2,140	2,780	4,460	4,890	4,460	2,290	1,000	900
3.....	1,060	970	3,120	4,670	1,860	2,610	4,460	4,460	3,860	2,140	1,000	900
4.....	890	1,160	2,610	4,460	2,290	2,610	4,250	4,250	3,860	2,140	1,000	1,000
5.....	740	670	2,780	4,460	2,450	2,610	4,050	3,670	4,050	2,000	900	1,000
6.....	810	740	2,780	4,890	5,330	2,450	4,050	4,250	3,670	1,860	900	1,000
7.....	810	740	3,300	4,670	5,330	2,290	3,480	.....	4,050	1,860	900	1,000
8.....	890	740	4,050	4,250	4,460	2,140	3,300	.....	4,050	1,720	900	900
9.....	890	670	4,460	7,010	3,860	2,140	3,300	.....	4,250	1,720	820	900
10.....	810	670	4,460	6,030	3,480	2,140	3,480	.....	4,250	1,580	820	820
11.....	810	670	4,890	7,010	3,120	2,290	3,480	.....	4,050	1,580	900	820
12.....	810	740	5,790	6,270	2,780	2,450	3,670	.....	4,050	1,580	1,000	820
13.....	810	670	17,100	5,560	2,610	3,480	3,670	.....	3,670	1,580	1,000	740
14.....	810	600	10,900	5,110	2,950	6,270	3,670	.....	3,300	1,720	1,100	740
15.....	740	600	6,760	4,460	2,610	32,500	3,860	.....	3,120	1,580	1,000	820
16.....	670	600	5,560	4,050	2,610	28,900	3,860	.....	2,950	1,580	900	820
17.....	740	600	4,250	4,890	2,780	18,100	4,250	.....	2,950	1,450	900	740
18.....	670	670	3,860	4,460	3,120	12,400	8,060	.....	3,300	1,450	900	740
19.....	670	810	3,300	4,670	3,120	9,170	10,300	.....	3,670	1,330	900	670
20.....	670	1,730	3,670	8,610	2,950	7,270	8,890	.....	3,670	1,330	900	670
21.....	810	2,140	4,050	7,010	2,450	6,270	7,270	.....	3,480	1,330	820	740
22.....	740	2,610	23,700	5,790	2,290	5,110	6,270	.....	3,300	1,330	740	670
23.....	740	4,050	23,400	5,110	2,140	4,460	6,270	.....	3,300	1,210	740	670
24.....	740	14,000	22,700	4,460	2,610	4,890	8,610	.....	3,120	1,210	820	670
25.....	740	20,700	15,500	3,670	2,610	5,330	8,060	.....	2,950	1,210	1,330	740
26.....	670	13,000	25,300	3,300	2,450	4,890	7,530	.....	2,780	1,210	1,000	740
27.....	670	7,530	20,400	2,450	2,610	4,890	6,030	.....	2,780	1,210	820	1,100
28.....	740	6,030	12,400	3,300	2,610	4,250	5,500	.....	2,780	1,210	900	1,000
29.....	740	5,330	8,610	2,780	2,450	3,860	5,110	.....	2,610	1,210	1,330	900
30.....	890	4,460	7,010	3,120	.....	4,670	4,670	.....	2,450	1,100	1,210	900
31.....	810	.....	6,510	2,450	.....	4,250	.....	.....	.....	1,100	1,000	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1908.											
1.....	820	3,300	1,580	11.....	900	1,000	1,210	19.....	2,140	3,120	1,860
2.....	900	3,300	1,330	12.....	900	900	1,450	20.....	1,720	4,890	1,720
3.....	1,000	3,120	1,330	13.....	1,100	900	3,120	21.....	1,720	8,330	1,450
4.....	1,100	2,290	1,210	14.....	1,210	900	1,860	22.....	1,330	6,270	2,610
5.....	600	1,720	1,210	15.....	2,780	820	2,290	23.....	1,450	4,670	2,290
6.....	670	1,450	1,000	16.....	2,000	900	2,140	24.....	1,330	2,610	6,030
7.....	820	1,330	1,000	17.....	1,720	900	2,000	25.....	1,210	2,450	4,250
8.....	820	1,210	1,210	18.....	1,580	1,330	1,860	26.....	1,210	2,290	4,460
9.....	900	1,100	1,100	19.....	1,330	2,290	2,000	27.....	1,330	2,290	6,270
10.....	900	1,100	1,000	20.....	2,780	2,140	1,720	28.....	1,450	1,860	4,670
								29.....	1,450	1,860	4,670
								30.....	5,790	.....	3,860
								31.....	.....	.....	.....

NOTE.—Daily discharge determined from two rating curves well defined between 800 and 6,000 second-feet, applicable 1905 to 1906 and 1908; earlier curve used for 1907 but not defined by measurements.

Monthly discharge of Clackamas River near Barton, Oreg., for 1905-1908.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
November 11-30.....	3,860	1,160	2,060	81,700	A.
December.....	5,490	2,290	3,800	234,000	A.
January.....	10,000	2,780	4,400	271,000	A.
February.....	13,000	2,140	5,430	302,000	A.
March.....	6,030	2,290	3,700	228,000	A.
April.....	6,510	3,480	4,280	255,000	A.
May.....	4,250	2,290	2,960	182,000	A.
June.....	5,110	1,730	2,730	162,000	A.
July.....	1,730	970	1,260	77,500	A.
August.....	970	834	890	54,700	A.
September.....	2,780	818	1,010	60,100	A.
The period.....				1,910,000	
1906-7.					
October.....	3,860	890	1,650	101,000	A.
November.....	25,100	1,370	8,720	519,000	B.
December.....	22,000	3,300	7,690	473,000	B.
January.....	20,200	3,480	6,420	395,000	B.
February.....	42,000	4,460	11,400	633,000	B.
March.....	4,670	2,950	3,600	221,000	A.
April.....	17,900	3,480	6,950	414,000	B.
May.....	4,250	2,290	3,370	207,000	A.
June.....	2,290	1,730	2,030	121,000	A.
July.....	2,140	1,060	1,360	83,600	A.
August.....	1,370	810	981	60,300	A.
September.....	1,370	810	884	52,600	A.
The year.....	42,000	810	4,530	3,280,000	
1907-8.					
October.....	1,260	670	801	49,300	A.
November.....	20,700	600	3,200	190,000	A.
December.....	25,300	2,610	8,710	536,000	B.
January.....	8,610	2,450	4,810	296,000	A.
February.....	5,330	1,860	2,910	167,000	A.
March.....	32,500	2,140	6,460	397,000	B.
April.....	10,300	3,300	5,270	314,000	A.
May.....			4,150	255,000	B.
June.....	4,670	2,450	3,510	209,000	A.
July.....	2,290	1,100	1,550	95,300	A.
August.....	1,330	740	953	58,600	A.
September.....	1,100	670	834	49,600	A.
The year.....	32,500	600	3,600	2,620,000	
1908.					
October.....	5,790	600	1,470	90,400	A.
November.....	8,330	820	2,360	140,000	A.
December.....	6,270	1,000	2,290	141,000	A.

^a Estimated by increasing discharge at Estacada 14 per cent.

OAK GROVE FORK OF CLACKAMAS RIVER AT PROPOSED INTAKE, NEAR
CAZADERO, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 4, T. 6 S., R. 7 E., at proposed intake of Oak Grove power development of Portland Railway Light & Power Co., about 35 miles above Cazadero.

Records available.—May 21, 1909, to September 30, 1910.

Drainage area.—131 square miles.

Gage.—Vertical staff.

Channel.—Gravel; fairly permanent.

Measurements.—Made from cable.

Accuracy.—Records from March to September, 1910, excellent. Measurements made January and February, 1910, subject to some uncertainty.

Cooperation.—Records obtained by Southern Pacific Co. and furnished by Portland Railway Light & Power Co.

Discharge measurements of Oak Grove Fork of Clackamas River at proposed intake, near Cazadero, Oreg., in 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1910.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 11	B. C. Kanters.....	1.05	440	Mar. 29	J. A. Sharp.....	1.55	817
12	do.....	1.05	447	30	do.....	1.45	762
13	do.....	1.05	422	31	do.....	1.45	738
14	do.....	1.05	434	Apr. 1	do.....	1.45	760
15	do.....	1.05	424	2	do.....	1.50	818
16	Alva Wiese.....	1.05	486	3	do.....	1.50	802
17	do.....	1.05	443	4	do.....	1.45	765
19	do.....	1.05	438	5	do.....	1.45	756
20	do.....	1.05	444	6	do.....	1.40	743
22	do.....	1.15	495	7	do.....	1.40	730
26	J. A. Sharp.....	1.30	681	8	do.....	1.45	767
27	do.....	1.30	609	9	do.....	1.50	795
28	do.....	1.30	666	10	do.....	1.55	833
29	do.....	1.25	638	11	do.....	1.55	824
30	do.....	1.25	627	12	do.....	1.55	840
31	do.....	1.25	644	13	do.....	1.55	822
Feb. 1	do.....	1.20	611	14	do.....	1.50	798
2	do.....	1.20	600	15	do.....	1.50	775
3	do.....	1.15	585	16	do.....	1.45	765
4	do.....	1.15	585	18	do.....	1.50	784
5	do.....	1.15	600	19	do.....	1.60	843
6	do.....	1.15	584	20	do.....	1.65	889
7	do.....	1.10	568	21	do.....	1.70	924
8	do.....	1.05	549	22	T. S. Carroll.....	1.70	886
9	do.....	1.05	532	23	do.....	1.70	902
10	do.....	1.05	537	24	do.....	1.70	910
11	do.....	1.05	540	25	do.....	1.80	972
12	do.....	1.05	539	26	do.....	1.75	939
13	do.....	1.10	561	27	do.....	1.70	883
14	do.....	1.05	533	28	do.....	1.65	844
15	do.....	1.05	520	29	do.....	1.55	798
16	do.....	1.00	503	30	J. A. Sharp.....	1.55	819
17	do.....	1.00	504	May 1	do.....	1.50	782
18	do.....	1.00	508	2	do.....	1.50	765
19	do.....	1.00	504	3	do.....	1.65	854
20	do.....	1.00	501	4	do.....	1.70	899
21	do.....	1.00	497	5	do.....	1.60	849
22	do.....	1.00	496	6	do.....	1.50	762
23	do.....	1.00	495	7	do.....	1.50	775
24	do.....	1.20	594	8	do.....	1.50	762
25	do.....	1.35	657	9	do.....	1.45	735
26	do.....	1.25	613	10	do.....	1.50	790
27	do.....	1.30	652	11	do.....	1.50	777
28	do.....	1.60	814	12	do.....	1.45	743
Mar. 1	do.....	2.65	1,420	13	do.....	1.40	719
2	do.....	2.35	1,450	14	do.....	1.35	695
3	do.....	2.25	1,420	15	do.....	1.35	690
4	do.....	2.15	1,320	16	do.....	1.30	661
5	do.....	2.05	1,270	17	do.....	1.30	654
6	do.....	1.95	1,160	18	do.....	1.25	632
7	do.....	1.80	1,050	19	do.....	1.20	602
8	do.....	1.75	972	20	do.....	1.20	588
9	do.....	1.65	924	21	do.....	1.20	591
10	do.....	1.60	854	22	do.....	1.15	569
11	do.....	1.60	889	23	do.....	1.15	563
12	do.....	1.60	869	24	do.....	1.10	552
13	do.....	1.65	921	June 4	do.....	1.00	492
14	do.....	1.75	1,000	8	do.....	.95	472
15	do.....	1.80	1,050	11	do.....	1.05	538
16	do.....	1.80	1,040	12	do.....	.95	484
17	do.....	1.85	1,060	18	do.....	.90	447
18	do.....	1.85	1,080	24	do.....	.90	439
19	do.....	2.05	1,230	July 2	do.....	.85	418
20	do.....	2.00	1,160	9	do.....	.80	403
21	do.....	1.90	1,120	21	do.....	.80	406
22	do.....	2.00	1,180	28	do.....	.75	384
23	do.....	1.90	1,080	Aug. 4	H. S. Scupham.....	.75	358
24	do.....	1.80	999	11	J. A. Sharp.....	.70	370
25	do.....	1.75	966	20	do.....	.70	376
26	do.....	1.70	898	30	H. S. Scupham.....	.70	373
27	do.....	1.65	886	Sept. 14	J. A. Sharp.....	.70	379
28	do.....	1.60	857	21	do.....	.75	391

Daily gage height, in feet, of Oak Grove Fork of Clackamas River at proposed intake, near Cazadero, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.	
1909.						1909.						
1.....		1.40	0.90	0.85	0.75	16.....		1.10	0.80	0.75	.....
2.....		1.40	.90	.85	.75	17.....		1.15	.80	.75	0.70	
3.....		1.40	.85	.85	.75	18.....		1.10	.85	.75	.....
4.....		1.40	.85	.80	.75	19.....		1.10	.85	.75	.....
5.....		1.40	.90	.80	.75	20.....		1.05	.85	.75	.70	
6.....		1.40	1.20	.80	.75	21.....	1.35	1.05	.85	.75	.....
7.....		1.40	.90	.80	.75	22.....	1.35	1.00	.85	.75	.....
8.....		1.40	.85	.80	.75	23.....	1.35	1.00	.85	.75	.....
9.....		1.35	.80	.80	.75	24.....	1.35	1.00	.80	.75	.....
10.....		1.25	.80	.75	.75	25.....	1.35	.95	.85	.75	.....
11.....		1.20	.80	.75	.70	26.....	1.30	.95	.90	.75	.....
12.....		1.15	.80	.75	.....	27.....	1.30	.95	.90	.75	.....
13.....		1.15	.80	.75	.....	28.....	1.40	.95	.90	.75	.....
14.....		1.15	.80	.75	.70	29.....	1.40	.90	.85	.75	.....
15.....		1.10	.80	.75	.....	30.....	1.40	.90	.85	.75	.....
						31.....	1.40	.....	.85	.75	.....
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	0.80	0.90	1.60	1.10	1.20	2.30	1.45	1.50	1.05	0.85	0.75	0.70
2.....	.80	1.15	1.50	1.10	1.20	2.42	1.50	1.50	1.05	.85	.75	.70
3.....	.80	1.10	1.40	1.10	1.15	2.22	1.50	1.65	1.05	.85	.75	.70
4.....	.80	1.10	1.40	1.10	1.15	2.15	1.45	1.70	1.00	.85	.75	.70
5.....	.80	.90	1.40	1.00	1.15	2.02	1.45	1.60	1.00	.85	.75	.70
6.....	.83	.80	1.40	1.00	1.15	1.92	1.40	1.50	1.00	.85	.75	.70
7.....	.83	.80	1.30	1.00	1.10	1.78	1.40	1.50	1.00	.85	.75	.70
8.....	.80	.90	1.30	1.00	1.05	1.75	1.45	1.50	.95	.85	.75	.70
9.....	.80	.90	1.20	1.00	1.05	1.68	1.50	1.48	.95	.80	.75	.70
10.....	.80	.95	1.10	1.05	1.05	1.65	1.55	1.55	.95	.80	.75	.70
11.....	.80	.90	1.10	1.05	1.05	1.60	1.55	1.50	1.08	.80	.70	.70
12.....	.80	.90	1.50	1.05	1.05	1.60	1.55	1.45	.95	.80	.70	.70
13.....	.80	.80	1.60	1.05	1.10	1.68	1.55	1.40	.95	.80	.70	.70
14.....	.80	.80	1.50	1.05	1.05	1.78	1.50	1.35	.95	.80	.70	.70
15.....	.80	.80	1.30	1.05	1.05	1.80	1.50	1.35	.95	.80	.70	.70
16.....	.80	.75	1.30	1.05	1.00	1.80	1.45	1.30	.95	.80	.70	.70
17.....	.80	.75	1.20	1.05	1.00	1.85	1.45	1.30	.95	.80	.70	.70
18.....	.80	1.10	1.20	1.10	1.00	1.85	1.50	1.25	.90	.80	.70	.70
19.....	.80	1.60	1.20	1.05	1.00	2.05	1.60	1.20	.90	.80	.70	.70
20.....	.80	2.10	1.10	1.05	1.00	2.00	1.65	1.20	.90	.80	.70	.70
21.....	.80	1.50	1.10	1.05	1.00	1.95	1.70	1.20	.90	.80	.70	.75
22.....	.80	3.00	1.00	1.15	1.00	1.98	1.70	1.15	.90	.80	.70	.70
23.....	.80	3.00	1.00	1.35	1.00	1.90	1.70	1.15	.90	.80	.70	.70
24.....	.80	3.40	1.00	1.50	1.20	1.80	1.70	1.15	.90	.80	.70	.70
25.....	.80	2.10	1.00	1.40	1.32	1.75	1.80	1.10	.90	.80	.70	.70
26.....	.80	1.80	1.00	1.30	1.25	1.70	1.75	1.10	.90	.80	.70	.70
27.....	.80	1.60	1.00	1.30	1.30	1.65	1.70	1.10	.90	.80	.70	.70
28.....	.80	1.65	1.00	1.30	1.60	1.60	1.65	1.10	.90	.75	.70	.70
29.....	.80	1.70	1.00	1.25	.....	1.52	1.55	1.10	.90	.75	.70	.70
30.....	.80	1.80	1.00	1.25	.....	1.45	1.55	1.10	.90	.75	.70	.70
31.....	.85	.....	1.00	1.25	.....	1.45	.....	1.10	.....	.75	.70	.....

Daily discharge, in second-feet, of Oak Grove Fork of Clackamas River at proposed intake, near Cazadero, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1909.						1909.					
1.....		720	455	435	395	16.....		550	415	395	375
2.....		720	455	435	395	17.....		575	415	395	375
3.....		720	435	435	395	18.....		550	435	395	375
4.....		720	435	415	395	19.....		550	435	395	375
5.....		720	455	415	395	20.....		525	435	395	375
6.....		720	600	415	395	21.....	690	525	435	395	375
7.....		720	455	415	395	22.....	690	500	435	395	375
8.....		720	435	415	395	23.....	690	500	435	395	375
9.....		690	415	415	395	24.....	690	500	415	395	375
10.....		630	415	395	395	25.....	690	478	435	395	375
11.....	600		415	395	375	26.....	660	478	455	395	375
12.....	575		415	395	375	27.....	660	478	455	395	375
13.....	575		415	395	375	28.....	720	478	455	395	375
14.....	575		415	395	375	29.....	720	455	435	395	415
15.....		550	415	395	375	30.....	720	455	435	395	415
						31.....	720		435	395	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	415	455	860	550	600	1,460	755	790	525	435	395	375
2.....	415	575	790	550	600	1,580	790	790	525	435	395	375
3.....	415	550	720	550	575	1,380	790	900	525	435	395	375
4.....	415	550	720	550	575	1,320	755	940	500	435	395	375
5.....	415	455	720	500	575	1,200	755	860	500	435	395	375
6.....	427	415	720	500	575	1,120	720	790	500	435	395	375
7.....	427	415	660	500	550	1,000	720	790	500	435	395	375
8.....	415	455	660	500	525	980	755	790	478	435	395	375
9.....	415	455	600	500	525	924	790	776	478	415	395	375
10.....	415	478	500	525	525	900	825	825	478	415	395	375
11.....	415	455	550	525	525	860	825	790	540	415	375	375
12.....	415	455	790	525	525	860	825	755	478	415	375	375
13.....	415	415	860	525	550	924	825	720	478	415	375	375
14.....	415	415	790	525	525	1,000	790	690	478	415	375	375
15.....	415	415	660	525	525	1,020	790	690	478	415	375	375
16.....	415	395	660	525	500	1,020	755	660	478	415	375	375
17.....	415	395	600	525	500	1,060	755	660	478	415	375	375
18.....	415	550	600	550	500	1,060	790	630	455	415	375	375
19.....	415	860	600	525	500	1,220	860	600	455	415	375	375
20.....	415	1,270	550	525	500	1,180	900	600	455	415	375	375
21.....	415	790	550	525	500	1,140	940	600	455	415	375	395
22.....	415	2,210	500	575	500	1,160	940	575	455	415	375	375
23.....	415	2,210	500	690	500	1,100	940	575	455	415	375	375
24.....	415	2,670	500	790	600	1,020	940	575	455	415	375	375
25.....	415	1,270	500	720	672	980	1,020	550	455	415	375	375
26.....	415	1,020	500	660	630	940	980	550	455	415	375	375
27.....	415	860	500	660	660	900	940	550	455	415	375	375
28.....	415	900	500	660	860	860	900	550	455	395	375	375
29.....	415	940	500	630		804	825	550	455	395	375	375
30.....	415	1,020	500	630		755	825	550	455	395	375	375
31.....	435		500	630		755		550		395	375	

Note.—Daily discharge determined from a rating curve well defined for Mar. 1 to Sept. 30, 1910, but only fairly well defined prior to Mar. 1.

Monthly discharge of Oak Grove Fork of Clackamas River at proposed intake, near Cazadero, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
May 21-31.....	720	660	695	15,200	B.
June.....	720	455	585	34,800	B.
July.....	600	415	438	26,900	B.
August.....	435	395	403	24,800	B.
September.....	415	375	384	22,800	B.
The period.....				124,000	
1909-10.					
October.....	435	415	416	25,600	B.
November.....	2,670	395	811	48,300	C.
December.....	860	500	620	38,100	B.
January.....	790	500	570	35,000	B.
February.....	860	500	561	31,200	B.
March.....	1,580	755	1,050	64,600	A.
April.....	1,020	720	834	49,600	A.
May.....	940	550	685	42,100	A.
June.....	540	455	478	28,400	A.
July.....	435	395	418	25,700	A.
August.....	395	375	381	23,400	A.
September.....	395	375	376	22,400	A.
The year.....	2,670	375	600	434,000	

SILETZ RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Siletz River rises in the mountains in the western part of Polk County, at an elevation of about 3,000 feet above sea level, flows in a general southwesterly direction to Siletz, in Lincoln County, and thence winds tortuously northward and westward until it enters the Pacific Ocean through Siletz River Bay, about 6 miles northwest of Kernville. Its total length is approximately 50 miles; and its drainage area measures about 320 square miles.

Its basin is densely timbered throughout, although some areas of logged-off lands may be found on the lower reaches of the stream.

The mean annual rainfall at the mouth of the river is 75 or 80 inches; at the headwaters it is undoubtedly as high as 150 inches. The annual run-off shows about 9 second-feet per square mile of drainage area. The records thus far show very little variation in the total run-off of this drainage area, but it is probable that 1905 would be classed as a dry year, and that 1910 may safely be considered a wet year.

SILETZ RIVER AT SILETZ, OREG.

Location.—In sec. 9, T. 10 S., R. 10 W., about 1 mile above the ferry at Siletz, 6 miles below Rock Creek, and about 9 miles north of Toledo, the nearest railroad point.

Records presented.—November 26, 1905, to September 30, 1910.

Drainage area.—220 square miles.

Gage.—Staff in two sections; lower section inclined, upper section vertical.

Channel.—Coarse gravel and sand; shifting.

Discharge measurements.—Made from a cable at the gage prior to fall flood of 1909; since then by wading, as equipment was destroyed.

Accuracy.—Estimates good.

Discharge measurements of Siletz River at Siletz, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905. Nov. 26	L. R. Allen.....	<i>Fect.</i> 2.15	<i>Sec.-ft.</i> 1,170	1908. Feb. 8	H. D. McGlashan.....	<i>Fect.</i> 3.75	<i>Sec.-ft.</i> 3,280
1906. Feb. 9	L. R. Allen.....	1.77	810	1910. Aug. 2	L. R. Allen.....	b.96	96.8
Mar. 29	do.....	2.03	1,030				
May 10	do.....	a 1.50	492				
July 23	do.....	1.23	309				
Sept. 24	I. E. Oakes.....	1.60	592				

a Small dam 75 feet below station may affect the stage a few hundredths foot.

b Discharge relation affected somewhat by eel trap just below gage.

Daily gage height, in feet, of Siletz River at Siletz, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....			3.75	4.5	2.5	3.6	2.3	1.9	1.9	2.1	1.15	0.85
2.....			4.2	3.8	2.4	3.0	2.2	1.85	1.85	2.0	1.1	.85
3.....			3.8	3.3	2.3	2.7	2.1	1.8	1.9	1.85	1.1	.85
4.....			3.3	3.0	2.2	2.9	2.0	1.75	2.3	1.8	1.1	.85
5.....			3.0	2.9	2.1	2.9	1.95	1.7	2.6	1.75	1.1	.85
6.....			3.7	2.8	2.0	2.9	1.9	1.65	2.7	1.65	1.1	.85
7.....			3.3	2.7	1.9	2.7	1.8	1.6	2.65	1.6	1.05	.85
8.....			3.1	2.9	1.8	2.6	1.75	1.6	2.6	1.55	1.05	.95
9.....			2.9	2.9	1.8	2.5	2.2	1.55	2.55	1.5	1.05	.95
10.....			2.6	2.8	1.7	2.4	2.0	1.55	2.6	1.5	1.05	.9
11.....			2.5	3.0	1.7	2.3	1.9	1.5	2.6	1.45	1.0	.9
12.....			2.3	3.6	1.6	2.1	1.85	1.5	2.7	1.4	1.0	.95
13.....			2.2	5.8	1.6	2.1	1.8	1.5	3.35	1.4	1.0	1.6
14.....			2.1	4.8	1.5	2.0	1.75	2.0	3.1	1.4	1.0	2.0
15.....			2.0	4.2	1.5	1.9	1.7	2.4	3.05	1.35	1.0	1.95
16.....			2.2	5.0	1.8	1.8	1.7	2.65	4.1	1.35	1.0	1.5
17.....			7.8	5.8	2.8	1.8	1.65	2.4	3.55	1.3	.95	1.35
18.....			6.0	5.6	6.6	1.8	1.6	2.3	3.1	1.3	.95	1.25
19.....			5.3	4.8	6.05	1.8	1.6	2.2	2.8	1.3	.95	1.15
20.....			5.6	4.0	7.6	1.9	1.55	2.2	2.6	1.3	.95	1.15
21.....			4.9	3.5	7.9	2.1	1.5	2.3	2.4	1.25	.95	1.1
22.....			4.0	3.8	6.9	2.1	1.5	2.2	2.25	1.25	.95	1.1
23.....			3.9	6.2	5.8	2.3	1.5	2.1	2.1	1.25	.9	1.4
24.....			3.1	8.1	6.4	2.4	2.35	2.0	2.0	1.25	.9	1.6
25.....			3.2	5.7	6.7	2.3	2.15	2.05	1.95	1.2	.9	1.6
26.....		2.1	7.5	4.4	6.4	2.2	2.2	2.3	1.9	1.2	.9	1.5
27.....		2.0	5.2	3.7	6.4	2.2	2.2	2.25	1.8	1.2	.9	1.5
28.....		2.0	4.3	3.2	4.7	2.1	2.2	2.2	1.8	1.2	.9	1.4
29.....		2.7	3.8	2.9	.....	2.0	2.1	2.1	2.2	1.2	.9	1.4
30.....		3.2	4.3	2.6	.....	2.1	2.0	2.05	2.4	1.15	.9	1.4
31.....			5.7	2.6	.....	2.3	.....	2.0	.....	1.15	.85	.....

Daily gage height, in feet, of Siletz River at Siletz, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1.4	2.0	2.0	2.8	7.6	3.0	2.9	1.7	1.3	1.15	0.9	0.8
2.....	1.5	2.0	2.0	3.2	5.3	2.9	2.8	1.65	1.25	1.1	.9	.8
3.....	1.8	2.2	2.0	13.55	6.2	2.8	2.8	1.6	1.25	1.1	.9	.8
4.....	1.7	3.0	2.7	13.2	9.0	2.7	2.9	1.6	1.25	1.1	.9	.8
5.....	1.6	3.4	2.9	7.2	16.9	2.6	3.2	1.55	1.25	1.1	.9	.75
6.....	1.6	3.7	6.2	5.1	10.3	2.5	5.0	1.55	1.25	1.05	.9	.75
7.....	1.5	10.74	4.2	3.9	6.8	2.45	11.5	1.5	1.2	1.05	.9	.75
8.....	1.5	12.5	4.0	3.4	5.2	2.4	7.6	1.5	1.2	1.05	1.0	.75
9.....	1.45	7.1	3.7	3.0	4.3	2.3	5.3	1.5	1.2	1.05	1.0	.75
10.....	1.6	9.1	3.5	2.7	3.9	2.8	4.7	1.55	1.3	1.05	1.0	.7
11.....	2.0	6.3	3.5	2.55	3.6	2.7	3.8	1.65	1.6	1.0	.95	.7
12.....	1.9	7.0	3.1	2.45	3.2	2.6	3.35	1.7	1.6	1.0	.95	.7
13.....	1.85	8.4	3.0	2.3	2.9	2.5	3.1	1.7	1.6	1.0	.9	.7
14.....	1.85	13.5	2.8	2.2	2.7	2.4	2.8	1.65	1.6	1.0	.9	.9
15.....	2.65	16.6	3.0	2.1	2.5	2.4	2.65	1.65	1.55	1.0	.9	1.5
16.....	4.0	9.9	4.0	2.0	2.3	2.4	2.4	1.6	1.5	1.0	.9	1.5
17.....	3.9	9.7	3.7	1.95	2.2	2.6	2.35	1.6	1.5	1.0	.85	1.5
18.....	3.6	7.6	3.5	1.9	2.1	2.7	2.7	1.55	1.45	.95	.85	1.45
19.....	3.1	5.5	4.1	1.9	2.0	2.6	2.6	1.5	1.4	.95	.85	1.45
20.....	2.7	4.4	11.5	1.85	1.9	2.5	2.5	1.5	1.4	.95	.85	1.45
21.....	2.6	4.1	12.9	2.2	1.85	2.5	2.4	1.45	1.35	.95	.8	1.4
22.....	2.4	3.7	7.0	2.3	1.8	2.4	2.35	1.4	1.3	.95	.8	1.4
23.....	2.25	3.5	5.1	2.3	1.7	2.6	2.3	1.4	1.3	.95	.8	1.4
24.....	2.1	3.2	4.0	2.2	2.1	2.5	2.2	1.35	1.25	.95	.85	1.4
25.....	2.5	2.9	3.8	2.1	2.7	2.7	2.1	1.35	1.25	.95	.9	1.4
26.....	3.3	2.7	3.6	2.0	2.7	2.6	2.0	1.35	1.2	.95	.9	1.35
27.....	3.0	2.5	3.45	2.0	2.75	2.6	1.9	1.35	1.2	.9	.9	1.6
28.....	2.7	2.4	3.15	2.5	2.85	2.6	1.85	1.3	1.2	.9	.85	1.8
29.....	2.55	2.3	3.0	2.2	.....	2.8	1.8	1.3	1.2	.9	.85	1.75
30.....	2.4	2.1	3.0	3.2	.....	2.7	1.75	1.3	1.15	.9	.85	1.75
31.....	2.2	.....	2.9	6.7	.....	3.0	.....	1.3	.....	.9	.85	.....
1907-8.												
1.....	2.0	1.5	4.0	5.5	2.3	2.5	2.45	2.3	2.0	1.45	1.05	1.3
2.....	2.0	1.5	3.4	4.6	2.15	2.7	2.45	2.25	1.9	1.4	1.0	1.2
3.....	2.0	1.45	3.0	4.5	2.05	2.6	2.4	3.1	1.85	1.4	1.0	1.15
4.....	1.95	1.4	2.75	4.5	4.2	2.5	2.4	2.8	1.8	1.35	1.0	1.1
5.....	1.95	1.4	3.3	4.5	5.3	2.4	2.4	2.6	1.75	1.35	1.0	1.1
6.....	1.95	1.35	3.0	4.4	7.2	2.3	2.35	2.45	1.7	1.35	1.0	1.05
7.....	1.95	1.35	3.6	3.9	4.95	2.2	2.35	2.35	1.65	1.3	1.0	1.05
8.....	1.9	1.3	3.4	4.6	3.8	2.15	2.3	2.3	1.6	1.3	.95	1.1
9.....	1.9	1.3	3.1	4.9	3.35	2.1	2.3	2.25	1.6	1.3	.95	1.1
10.....	1.9	1.25	3.3	4.5	3.0	2.1	2.3	2.2	1.55	1.3	.95	1.05
11.....	1.85	1.2	4.6	4.3	2.8	2.05	2.25	2.1	1.5	1.25	.95	1.05
12.....	1.85	1.2	6.1	3.9	2.7	2.0	2.25	2.15	1.5	1.25	1.0	1.05
13.....	1.7	1.2	12.0	3.5	2.6	2.6	2.2	2.1	1.5	1.25	1.0	1.0
14.....	1.7	1.2	9.2	3.2	2.5	5.3	2.2	2.0	1.4	1.25	1.0	1.0
15.....	1.65	1.3	6.1	3.0	2.45	21.65	2.2	2.2	1.4	1.2	1.0	1.0
16.....	1.65	1.3	4.1	2.7	2.4	12.8	2.2	2.8	1.35	1.2	1.0	.9
17.....	1.6	1.25	3.5	3.8	2.6	8.5	3.0	3.0	1.35	1.2	.95	.9
18.....	1.6	1.25	3.8	3.1	2.55	5.8	6.8	3.0	1.6	1.2	.95	.9
19.....	1.55	1.7	3.0	4.3	2.45	4.0	4.2	2.9	1.7	1.2	.95	.9
20.....	1.55	2.6	4.8	4.9	2.4	3.4	3.4	2.7	1.65	1.15	.95	.9
21.....	1.5	3.2	8.85	4.1	2.35	2.9	2.9	2.5	1.6	1.15	.9	.85
22.....	1.5	4.8	13.0	3.7	2.3	2.75	3.1	2.5	1.55	1.15	.9	.85
23.....	1.45	6.35	9.2	3.5	2.3	2.6	3.8	2.4	1.5	1.15	.9	.85
24.....	1.45	16.4	9.9	3.2	2.5	2.5	6.5	2.3	1.5	1.1	.9	.85
25.....	1.4	12.5	6.7	2.9	2.6	2.8	4.7	2.3	1.5	1.1	.85	.85
26.....	1.35	9.0	10.5	2.7	2.5	2.7	3.9	2.4	1.55	1.1	.85	.85
27.....	1.35	5.8	7.8	2.55	2.6	2.8	3.1	2.35	1.55	1.1	.85	.8
28.....	1.3	4.7	5.4	3.0	2.6	2.7	2.7	2.3	1.5	1.1	1.1	.8
29.....	1.35	5.7	4.5	2.8	2.6	2.7	2.5	2.2	1.5	1.05	1.4	.8
30.....	1.35	5.0	3.8	2.6	.....	2.8	2.35	2.15	1.45	1.05	1.4	.8
31.....	1.5	.....	3.4	2.45	.....	2.9	.....	2.1	.....	1.05	1.35	.....

Daily gage height, in feet, of Siletz River at Siletz, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	0.8	3.2	2.3	3.5	4.0	4.9	3.3	1.45	3.0	1.3	1.15	0.8
2.....	.8	3.0	2.15	5.8	6.5	4.4	3.0	1.4	2.6	1.3	1.15	.8
3.....	.8	2.7	2.1	6.5	5.6	4.1	2.8	1.5	2.3	1.3	1.15	.8
4.....	.8	2.4	2.0	5.1	5.2	3.9	2.7	1.5	2.1	1.25	1.15	.75
5.....	.8	2.2	1.9	4.2	5.0	4.6	2.6	1.6	2.0	1.25	1.1	.75
6.....	.75	2.0	1.8	3.7	5.0	4.2	2.5	1.7	1.9	1.4	1.1	.75
7.....	.75	1.9	1.7	4.2	5.2	3.7	2.4	1.9	1.8	1.5	1.1	.75
8.....	.75	1.85	1.65	3.9	4.8	3.5	2.3	1.8	1.75	1.5	1.1	.75
9.....	.75	1.8	1.6	3.9	4.9	3.35	2.2	1.7	1.7	1.45	1.1	.7
10.....	.75	1.65	1.55	3.2	4.4	3.2	2.1	1.6	1.65	1.45	1.05	.7
11.....	.75	1.6	1.5	2.9	4.0	3.1	2.0	1.6	1.6	1.6	1.05	.95
12.....	.75	1.5	1.5	2.6	3.6	2.9	1.9	1.5	1.6	1.5	1.05	.95
13.....	.9	1.5	2.1	2.35	4.1	2.8	1.8	1.5	1.55	1.5	1.05	.9
14.....	3.2	1.45	1.9	2.2	4.2	2.7	1.7	1.45	1.5	1.45	1.0	.9
15.....	3.0	1.4	1.8	3.2	5.4	2.6	1.65	1.45	1.5	1.4	1.0	.9
16.....	2.9	1.4	1.7	4.6	6.8	2.5	1.6	1.6	1.45	1.4	1.0	.9
17.....	2.9	1.5	1.65	5.9	10.9	2.4	1.55	1.8	1.4	1.4	1.0	.85
18.....	2.8	3.5	1.7	8.5	9.8	2.35	1.5	1.9	1.4	1.35	1.0	1.1
19.....	2.7	2.7	1.65	14.2	8.1	2.3	1.5	1.7	1.4	1.35	.95	1.1
20.....	2.6	3.0	1.6	11.5	6.2	2.3	1.45	1.6	1.35	1.35	.95	1.05
21.....	2.55	4.8	1.6	11.2	5.9	2.25	1.45	1.5	1.35	1.3	.95	1.05
22.....	2.5	6.8	4.9	8.1	4.0	2.2	1.4	1.4	1.3	1.3	.9	1.05
23.....	2.5	7.5	3.1	5.8	4.1	2.15	1.35	1.3	1.3	1.25	.9	1.0
24.....	2.45	5.5	2.6	4.6	3.8	2.1	1.3	1.3	1.3	1.25	.9	1.0
25.....	2.4	4.2	3.7	3.8	5.1	2.1	1.3	1.4	1.25	1.25	.9	1.5
26.....	2.35	3.4	4.9	3.35	4.1	2.05	1.4	1.4	1.25	1.25	.85	1.55
27.....	2.3	3.0	6.9	3.1	4.8	2.0	1.6	1.6	1.3	1.2	.85	1.5
28.....	2.25	2.75	7.8	2.95	4.9	2.0	1.5	1.7	1.5	1.2	.85	1.5
29.....	2.4	2.55	6.0	2.8	-----	2.1	1.5	3.6	1.4	1.2	.85	1.45
30.....	2.5	2.4	4.5	2.7	-----	2.3	1.45	3.2	1.4	1.2	.85	1.45
31.....	4.9	-----	3.6	3.1	-----	3.6	-----	3.5	-----	1.15	.8	-----
1909-10.												
1.....	1.45	3.5	6.5	2.2	5.8	12.3	2.5	1.6	2.5	2.0	1.5	1.2
2.....	1.4	13.5	5.2	2.2	4.9	15.6	2.7	1.6	2.8	2.0	1.5	1.2
3.....	1.4	10.2	4.0	2.2	4.4	10.2	2.6	1.6	2.8	1.9	1.5	1.2
4.....	1.4	5.7	3.8	2.15	4.4	6.8	2.5	1.6	2.7	1.9	1.4	1.2
5.....	1.4	4.3	3.6	3.0	4.2	5.2	2.4	1.6	2.7	1.8	1.4	1.2
6.....	1.4	3.8	3.5	3.0	3.6	4.8	2.3	1.6	2.6	1.8	1.4	1.2
7.....	1.35	3.7	3.6	2.8	3.2	4.4	3.4	1.6	2.6	1.8	1.4	1.1
8.....	1.35	5.5	3.6	2.9	3.0	4.0	4.8	1.6	2.6	1.8	1.4	1.1
9.....	1.35	5.6	6.5	3.4	3.0	3.6	4.3	1.6	2.6	1.8	1.4	1.1
10.....	1.35	6.8	5.4	3.2	3.1	3.3	3.8	2.8	2.6	1.8	1.4	1.1
11.....	1.3	5.4	5.3	3.0	3.6	3.1	3.7	2.8	2.5	1.7	1.4	1.0
12.....	1.3	4.5	11.8	2.8	3.8	2.8	3.3	2.7	2.5	1.7	1.4	1.0
13.....	1.3	3.9	8.5	2.7	4.1	2.6	3.0	2.7	2.5	1.7	1.4	1.0
14.....	1.3	3.3	5.7	2.7	3.8	2.5	2.8	2.6	2.4	1.7	1.4	1.0
15.....	1.3	2.9	4.5	2.8	3.5	2.4	2.6	2.6	2.4	1.7	1.4	1.0
16.....	1.25	2.7	3.7	2.9	3.5	2.4	2.5	2.6	2.4	1.6	1.4	1.0
17.....	1.25	2.5	3.2	3.2	4.2	2.2	2.4	2.6	2.4	1.6	1.4	1.0
18.....	1.5	5.7	2.8	3.8	5.3	2.1	2.2	2.6	2.4	1.6	1.3	1.0
19.....	2.55	9.4	2.6	6.5	4.6	2.0	2.2	2.5	2.3	1.6	1.3	1.0
20.....	2.8	11.3	2.4	5.4	3.7	2.0	2.1	2.5	2.3	1.6	1.3	1.0
21.....	2.9	7.2	2.3	4.6	3.3	1.9	2.0	2.5	2.3	1.6	1.3	1.0
22.....	2.8	21.8	2.2	4.8	3.0	1.8	2.0	2.6	2.2	1.6	1.3	.9
23.....	2.8	16.3	2.2	5.2	2.8	1.8	1.9	2.7	2.2	1.6	1.2	.9
24.....	2.6	13.4	2.1	5.8	2.6	1.8	1.8	2.8	2.2	1.6	1.2	.9
25.....	2.3	8.0	2.1	6.5	3.1	1.8	1.8	2.7	2.1	1.6	1.2	.9
26.....	2.0	5.8	2.1	6.2	3.4	1.7	1.8	2.7	2.1	1.6	1.2	.9
27.....	1.8	4.6	2.05	5.7	4.9	1.7	1.7	2.6	2.1	1.6	1.2	1.5
28.....	1.7	5.1	2.0	5.8	8.2	1.6	1.7	2.6	2.0	1.6	1.2	1.6
29.....	1.8	8.6	2.0	5.4	-----	1.6	1.7	2.6	2.0	1.5	1.2	1.8
30.....	1.9	11.2	2.5	5.2	-----	1.6	1.6	2.6	2.0	1.5	1.2	1.7
31.....	2.9	-----	2.4	6.6	-----	1.5	-----	2.5	-----	1.5	1.2	-----

NOTE.—Flood of Nov. 22, 1909, reached a maximum stage of 24.6 feet as determined by levels to observer's high-water mark.

No ice at this station in 1910. Gage heights at low water affected by backwater from brush dam placed part way across the channel 75 feet below the gage.

Daily discharge, in second-feet, of Siletz River at Siletz, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1			3,200	4,320	1,550	2,990	1,320	887	887	1,100	264	132
2			3,860	3,270	1,430	2,180	1,210	834	834	902	237	132
3			3,270	2,570	1,320	1,790	1,100	782	887	834	237	132
4			2,570	2,180	1,210	2,050	992	731	1,320	782	237	132
5			2,180	2,050	1,100	2,050	940	680	1,670	731	237	132
6			3,130	1,920	992	2,050	887	632	1,790	632	237	132
7			2,570	1,790	887	1,790	782	585	1,730	585	214	132
8			2,310	2,050	782	1,670	731	585	1,670	542	214	170
9			2,050	2,050	782	1,550	1,210	542	1,610	498	214	170
10			1,670	1,920	680	1,430	992	542	1,670	498	214	150
11			1,550	2,180	680	1,320	887	498	1,670	458	190	150
12			1,320	2,990	585	1,100	834	498	1,790	417	190	170
13			1,210	6,170	585	1,100	782	498	2,640	417	190	585
14			1,100	4,770	498	992	731	992	2,310	417	190	992
15			992	3,860	498	887	680	1,430	2,240	383	190	940
16			1,210	5,050	782	782	680	1,730	3,710	383	190	498
17			8,970	6,170	1,920	782	632	1,430	2,920	349	170	383
18			6,450	5,890	1,670	782	585	1,320	2,310	349	170	319
19			5,470	4,770	6,520	782	585	1,210	1,920	349	170	264
20			5,890	3,560	8,690	887	542	1,210	1,670	349	170	264
21			4,910	2,850	9,110	1,100	498	1,320	1,430	319	170	237
22			3,560	3,270	7,710	1,100	498	1,210	1,260	319	170	237
23			3,410	6,730	6,170	1,320	498	1,100	1,100	319	150	417
24			2,310	9,400	7,010	1,430	1,880	992	992	319	150	585
25			2,440	6,030	7,430	1,320	1,160	1,050	940	289	150	585
26	1,100		8,550	4,160	7,010	1,210	1,210	1,320	887	289	150	498
27	992		5,330	3,130	7,010	1,210	1,210	1,260	782	289	150	498
28	992		4,010	2,440	4,640	1,100	1,210	1,210	782	289	150	417
29	1,790		3,270	2,050		992	1,100	1,100	1,210	289	150	417
30	2,440		4,010	1,670		1,100	992	1,050	1,430	264	150	417
31			6,030	1,670		1,320		992		264	132	
1906-7.												
1	417	992	992	1,920	8,690	2,180	2,050	680	349	263	150	113
2	498	992	992	2,440	5,470	2,050	1,920	632	319	237	150	113
3	782	1,210	992	17,300	6,730	1,920	1,920	585	319	237	150	113
4	680	2,180	1,790	16,800	10,700	1,790	2,050	585	319	237	150	113
5	585	2,710	2,050	8,130	22,200	1,670	2,440	542	319	237	150	98
6	585	3,130	6,730	5,190	12,600	1,550	5,050	542	319	214	150	98
7	498	13,200	3,860	3,410	7,570	1,490	14,300	498	289	214	150	98
8	498	15,800	3,560	2,710	5,330	1,430	8,690	498	289	214	190	98
9	458	7,990	3,130	2,180	4,010	1,320	5,470	498	289	214	190	98
10	585	10,800	2,850	1,790	3,410	1,920	4,640	542	349	214	190	83
11	992	6,870	2,850	1,610	2,990	1,790	3,270	632	585	190	170	83
12	887	7,850	2,310	1,490	2,440	1,670	2,640	680	585	190	170	83
13	834	9,930	2,180	1,320	2,050	1,550	2,310	680	585	190	150	83
14	834	17,200	1,920	1,210	1,790	1,430	1,920	632	585	190	150	150
15	1,730	21,700	2,180	1,100	1,550	1,430	1,790	632	542	190	150	498
16	3,560	12,000	3,560	992	1,320	1,430	1,430	585	498	190	150	498
17	3,410	11,700	3,130	940	1,210	1,670	1,380	585	498	190	132	498
18	2,990	8,690	2,850	887	1,100	1,790	1,790	542	458	170	132	458
19	2,310	5,750	3,710	887	992	1,670	1,670	498	417	170	132	458
20	1,790	4,160	14,300	834	887	1,550	1,550	498	417	170	132	458
21	1,670	3,710	16,400	1,210	834	1,550	1,430	458	383	170	113	417
22	1,430	3,130	7,850	1,320	782	1,430	1,380	417	349	170	113	417
23	1,260	2,850	5,190	1,320	680	1,670	1,320	417	349	170	113	417
24	1,100	2,440	3,560	1,210	1,100	1,550	1,210	383	319	170	132	417
25	1,550	2,050	3,270	1,100	1,790	1,790	1,100	383	319	170	150	417
26	2,570	1,790	2,990	992	1,790	1,670	992	383	289	170	150	383
27	2,180	1,550	2,780	992	1,860	1,670	887	383	289	150	150	585
28	1,790	1,430	2,380	1,550	1,980	1,670	834	349	289	150	132	782
29	1,610	1,320	2,180	1,210		1,920	782	349	289	150	132	731
30	1,430	1,100	2,180	2,440		1,790	731	349	263	150	132	731
31	1,210		2,050	7,430		2,180		349		150	132	

Daily discharge, in second-feet, of Siletz River at Siletz, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	992	498	3,560	5,750	1,320	1,550	1,490	1,320	992	458	214	349
2.....	992	498	2,710	4,480	1,160	1,790	1,490	1,260	887	417	190	289
3.....	992	458	2,180	4,320	1,050	1,670	1,430	2,310	834	417	190	263
4.....	940	417	1,860	4,320	3,860	1,550	1,430	1,920	782	383	190	237
5.....	940	417	2,570	4,320	5,470	1,430	1,430	1,670	731	383	190	237
6.....	940	383	2,180	4,160	8,130	1,320	1,380	1,490	680	383	190	214
7.....	940	383	2,990	3,410	4,980	1,210	1,380	1,380	632	349	190	214
8.....	887	349	2,710	4,480	3,270	1,160	1,210	1,320	585	349	170	237
9.....	887	349	2,310	4,910	2,640	1,100	1,210	1,260	585	349	170	237
10.....	887	319	2,570	4,320	2,180	1,100	1,210	1,210	542	349	170	214
11.....	834	289	4,480	4,010	1,920	1,050	1,260	1,210	498	319	170	214
12.....	834	289	6,590	3,410	1,790	992	1,260	1,160	498	319	190	214
13.....	680	289	15,000	2,850	1,670	1,670	1,210	1,100	498	319	190	190
14.....	680	289	11,000	2,440	1,550	5,470	1,210	992	417	319	190	190
15.....	632	349	6,590	2,180	1,490	29,000	1,210	1,210	417	289	190	190
16.....	632	349	3,710	1,790	1,430	16,200	1,210	1,920	383	289	190	150
17.....	585	319	2,850	3,270	1,670	9,980	2,180	2,180	383	289	170	150
18.....	585	319	3,270	2,310	1,610	6,170	7,570	2,180	585	289	170	150
19.....	542	680	2,180	4,010	1,490	3,560	3,860	2,050	680	289	170	150
20.....	542	1,670	4,770	4,910	1,430	2,710	2,710	1,790	632	263	170	150
21.....	498	2,440	10,500	3,710	1,380	2,050	2,050	1,550	585	263	150	132
22.....	498	4,770	16,500	3,130	1,320	1,860	2,310	1,550	542	263	150	132
23.....	458	6,940	11,000	2,850	1,320	1,670	3,270	1,430	498	263	150	132
24.....	458	21,400	12,000	2,440	1,550	1,550	7,150	1,320	498	237	150	132
25.....	417	15,800	7,430	2,050	1,670	1,920	4,640	1,320	498	237	132	132
26.....	383	10,700	12,900	1,790	1,550	1,790	3,410	1,430	542	237	132	132
27.....	383	6,170	8,970	1,610	1,670	1,920	2,310	1,380	542	237	132	113
28.....	349	4,640	5,610	2,180	1,670	1,790	1,790	1,320	498	237	237	113
29.....	383	6,030	4,320	1,920	1,670	1,790	1,550	1,210	498	214	417	113
30.....	383	5,050	3,270	1,670	-----	1,920	1,380	1,160	458	214	417	113
31.....	498	-----	2,710	1,490	-----	2,050	-----	1,100	-----	214	383	-----
1908-9.												
1.....	113	2,440	1,320	2,950	3,650	4,910	2,670	460	2,270	350	262	112
2.....	113	2,180	1,160	6,170	7,150	4,210	2,270	420	1,750	350	262	112
3.....	113	1,790	1,100	7,150	5,890	3,790	2,010	500	1,380	350	262	112
4.....	113	1,430	992	5,190	5,330	3,510	1,880	500	1,140	320	262	98
5.....	113	1,210	887	3,930	5,050	4,490	1,750	590	1,020	320	235	98
6.....	98	992	782	3,230	5,050	3,930	1,620	690	910	420	235	98
7.....	98	887	680	3,930	5,330	3,230	1,500	910	800	500	235	98
8.....	98	834	632	3,510	4,770	2,950	1,380	800	745	500	235	98
9.....	98	782	585	3,510	4,910	2,740	1,260	690	690	460	235	83
10.....	98	632	542	2,530	4,210	2,530	1,140	590	640	460	212	83
11.....	98	585	498	2,140	3,650	2,400	1,020	590	590	590	212	169
12.....	98	498	498	1,750	3,090	2,140	910	500	590	500	212	169
13.....	150	498	1,100	1,440	3,790	2,010	800	500	545	500	212	148
14.....	2,440	458	887	1,260	3,930	1,880	690	460	500	460	190	148
15.....	2,180	417	782	2,530	5,610	1,750	640	460	500	420	190	148
16.....	2,050	417	680	4,490	7,570	1,620	590	590	460	420	190	148
17.....	2,050	498	632	6,310	13,500	1,500	545	800	420	420	190	130
18.....	1,920	2,850	680	9,980	11,900	1,440	500	910	420	385	190	235
19.....	1,790	1,790	632	18,200	9,400	1,380	500	690	420	385	169	235
20.....	1,670	2,180	585	14,300	6,730	1,380	460	590	385	385	169	212
21.....	1,610	4,770	585	13,900	6,310	1,320	460	500	385	350	169	212
22.....	1,550	7,570	4,910	9,400	3,650	1,260	420	420	350	350	148	212
23.....	1,550	8,550	2,310	6,170	3,790	1,200	385	350	350	320	148	190
24.....	1,490	5,750	1,670	4,490	3,370	1,140	350	350	350	320	148	190
25.....	1,430	3,860	3,130	3,370	5,190	1,140	350	420	320	320	148	500
26.....	1,380	2,710	4,910	2,740	3,790	1,080	420	420	320	320	130	545
27.....	1,320	2,180	7,710	2,400	4,770	1,020	590	590	350	290	130	500
28.....	1,260	1,860	8,970	2,200	4,910	1,020	500	690	500	290	130	500
29.....	1,430	1,610	6,450	2,010	-----	1,140	500	3,090	420	290	130	460
30.....	1,550	1,430	4,320	1,880	-----	1,380	460	2,530	420	290	130	460
31.....	4,960	-----	2,990	2,400	-----	3,090	-----	2,950	-----	262	112	-----

Daily discharge, in second-feet, of Siletz River at Siletz, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	460	2,950	7,150	1,260	6,170	15,500	1,620	590	1,620	1,020	129	82
2	420	17,200	5,330	1,260	4,910	20,300	1,880	590	2,010	1,020	97	81
3	420	12,400	3,650	1,260	4,210	12,400	1,750	590	2,010	910	96	81
4	420	6,030	3,370	1,200	4,210	7,570	1,620	590	1,880	910	96	80
5	420	4,070	3,090	2,270	3,930	5,330	1,500	590	1,880	800	95	80
6	420	3,370	2,950	2,270	3,090	4,770	1,380	590	1,750	800	95	79
7	385	3,230	3,090	2,010	2,530	4,210	2,810	590	1,750	800	94	79
8	385	5,750	3,090	2,140	2,270	3,650	4,770	590	1,750	800	94	78
9	385	5,890	7,150	2,140	2,270	3,090	4,070	590	1,750	800	93	78
10	385	7,570	5,610	2,530	2,400	2,670	3,370	2,010	1,750	800	93	77
11	350	5,610	5,470	2,270	3,090	2,400	3,230	2,010	1,620	690	92	77
12	350	4,350	14,800	2,010	3,370	2,010	2,670	1,880	1,620	690	92	76
13	350	3,510	9,980	1,880	3,790	1,750	2,270	1,880	1,620	690	91	76
14	350	2,670	6,030	1,880	3,370	1,620	2,010	1,750	1,500	690	91	75
15	350	2,140	4,350	2,010	2,950	1,500	1,750	1,750	1,500	690	90	74
16	320	1,880	3,230	2,140	2,950	1,500	1,620	1,750	1,500	657	90	74
17	320	1,620	2,530	2,530	3,930	1,260	1,500	1,750	1,500	624	89	73
18	500	6,030	2,010	3,370	5,470	1,140	1,260	1,750	1,500	591	89	72
19	1,680	11,300	1,750	7,150	4,490	1,020	1,260	1,620	1,380	558	88	72
20	2,010	14,000	1,500	5,610	3,230	1,020	1,140	1,620	1,380	525	88	71
21	2,140	8,130	1,380	4,490	2,670	910	1,020	1,620	1,380	492	87	71
22	2,010	29,300	1,260	4,770	2,270	800	1,020	1,750	1,260	459	87	70
23	2,010	21,300	1,260	5,330	2,010	800	910	1,880	1,260	426	86	70
24	1,750	17,100	1,140	6,170	1,750	800	800	2,010	1,260	393	86	70
25	1,380	9,250	1,140	7,150	2,400	800	800	1,880	1,140	360	85	70
26	1,020	6,170	1,140	6,730	2,810	690	800	1,880	1,140	327	85	70
27	800	4,490	1,080	6,030	4,910	690	690	1,750	1,140	294	84	490
28	690	5,190	1,020	6,170	9,540	590	690	1,750	1,020	261	84	590
29	800	10,100	1,020	5,610	-----	590	690	1,750	1,020	228	83	800
30	910	13,900	1,620	5,330	-----	590	590	1,750	1,020	195	83	690
31	2,140	-----	1,500	7,290	-----	500	-----	1,620	-----	162	82	-----

NOTE.—Daily discharge determined as follows: 1905 to July 15, 1910, from rating curve well defined between 250 and 3,500 second-feet; July 16-Sept. 30, 1910, by indirect method for shifting channel.

Monthly discharge of Siletz River at Siletz, Oreg., for 1905-1910.

[Drainage area, 220 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905-6.							
November 26-30	2,440	992	1,460	6.64	1.23	14,500	A.
December	8,970	992	3,510	16.0	18.45	216,000	B.
January	9,400	1,670	3,640	16.5	19.02	224,000	B.
February	9,110	498	3,180	14.5	15.10	177,000	B.
March	2,990	782	1,360	6.18	7.12	83,600	A.
April	1,380	498	895	4.07	4.54	53,300	A.
May	1,730	498	975	4.43	5.11	60,000	A.
June	3,710	782	1,600	7.27	8.11	95,200	A.
July	1,100	264	462	2.10	2.42	28,400	A.
August	264	132	187	.850	.98	11,500	B.
September	992	132	343	1.56	1.74	20,400	A.
The period						984,000	

Monthly discharge of Siletz River at Siletz, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906-7.							
October.....	3,560	417	1,380	6.27	7.23	84,800	A.
November.....	21,700	992	6,210	28.3	31.57	370,000	C.
December.....	16,400	992	3,770	17.1	19.71	232,000	B.
January.....	17,300	834	3,030	13.8	15.91	186,000	B.
February.....	22,200	680	4,070	18.5	19.26	226,000	B.
March.....	2,180	1,320	1,680	7.64	8.81	103,000	A.
April.....	14,300	731	2,630	12.0	13.39	156,000	A.
May.....	680	349	509	2.31	2.66	31,300	A.
June.....	585	203	382	1.74	1.94	22,700	A.
July.....	263	150	190	.864	1.00	11,700	B.
August.....	190	113	146	.664	.77	8,980	C.
September.....	782	83	320	1.45	1.62	19,000	A.
The year.....	22,200	83	2,030	9.23	123.87	1,450,000	
1907-8.							
October.....	992	349	606	3.03	3.49	41,000	A.
November.....	21,400	289	3,100	14.1	15.73	184,000	B.
December.....	16,500	1,860	5,850	26.6	30.67	360,000	C.
January.....	5,750	1,490	3,240	14.7	16.95	199,000	B.
February.....	8,130	1,050	2,200	10.0	10.79	127,000	A.
March.....	29,000	992	3,580	16.3	18.79	220,000	B.
April.....	7,570	1,210	2,240	10.2	11.38	133,000	A.
May.....	2,310	992	1,470	6.68	7.70	90,400	A.
June.....	992	383	580	2.64	2.94	34,500	A.
July.....	458	214	304	1.38	1.59	18,700	A.
August.....	417	132	197	.895	1.03	12,100	B.
September.....	349	113	183	.832	.93	10,900	B.
The year.....	29,000	113	1,970	8.95	121.99	1,430,000	
1908-9.							
October.....	4,960	98	1,130	5.14	5.93	69,500	A.
November.....	8,550	417	2,120	9.64	10.76	126,000	A.
December.....	8,970	498	2,050	9.32	10.74	126,000	A.
January.....	18,200	1,260	5,010	22.8	26.29	308,000	B.
February.....	13,500	3,090	5,580	25.4	26.45	310,000	C.
March.....	4,910	1,020	2,210	10.0	11.53	136,000	A.
April.....	2,670	350	952	4.33	4.83	56,600	A.
May.....	3,090	350	792	3.60	4.15	48,700	A.
June.....	2,270	320	665	3.02	3.37	39,600	A.
July.....	590	262	384	1.75	2.02	23,600	B.
August.....	262	112	190	.864	1.00	11,700	C.
September.....	545	83	217	.986	1.10	12,900	C.
The year.....	18,200	83	1,780	8.09	108.17	1,270,000	
1909-10.							
October.....	2,140	320	849	3.86	4.45	52,200	A.
November.....	29,300	1,620	8,220	37.4	41.73	489,000	C.
December.....	14,800	1,020	3,540	16.1	18.56	218,000	B.
January.....	7,290	1,200	3,710	16.9	19.48	228,000	A.
February.....	9,540	1,750	3,610	16.4	17.08	200,000	A.
March.....	20,300	500	3,310	15.0	17.29	204,000	B.
April.....	4,770	590	1,720	7.82	8.72	102,000	A.
May.....	2,010	590	1,440	6.55	7.55	88,500	A.
June.....	2,010	1,020	1,500	6.82	7.61	89,300	A.
July.....	1,020	162	602	2.74	3.16	37,000	C.
August.....	129	82	90.8	.413	.48	5,580	C.
September.....	800	70	151	.686	.77	8,980	C.
The year.....	30,600	70	2,400	10.9	146.88	1,720,000	

UMPQUA RIVER DRAINAGE BASIN.**GENERAL FEATURES.**

Umpqua River is formed by the junction of North Umpqua and South Umpqua near the city of Roseburg in Douglas County, Oreg. The North Umpqua rises in Mardu Lake near the summit of the Cascade Range at an elevation of over 6,000 feet and pursues a westerly course. The South Umpqua is also formed by two forks—the northern rising on old Bailey Mountain, about 4 miles south of Diamond Lake, and the southern on the northern slope of Abbot Butte, and the united waters flow westward and northward. From the junction of its principal forks, the Umpqua takes a tortuous but in general northerly course to Elkton, beyond which its course is more nearly westward until it debouches into the Pacific at Winchester Bay in the northwestern part of Douglas County. Its total drainage area comprises about 4,000 square miles. At Scottsburg, just above tide water, the area measures 3,070 square miles. The North Umpqua drains 1,080 and the South Umpqua 1,990 square miles. The important tributaries of the Umpqua are Smiths River, which drains the low mountainous area near the coast; Elk Creek, draining the divide between the Umpqua and Willamette basins; and Cow Creek, which drains the divide between the Rogue River and Umpqua basins.

The country is rough and mountainous, and the streams flow in comparatively narrow valleys bordered by narrow stretches of agricultural land. The general elevation of the headwaters is 6,000 feet, with a few snow-capped peaks 8,000 to 10,000 feet high. The elevation at Roseburg is 485 feet above sea level. The North Umpqua falls over 3,600 feet in the 75 miles from Diamond Lake to Roseburg by the river channel. The lower portion of the Umpqua has comparatively little fall, as is evidenced by the very winding character of the stream.

The region is one of the most densely forested in the United States, and probably 80 per cent of the drainage area can be classed as heavily forested. About one-fourth of the forest area is included in the national forests; the rest is owned by corporations and individuals.

The mean annual rainfall at Roseburg is 30 inches; at Drain, near the divide between the Willamette and Umpqua drainages, it is 48 inches. At the mouth of the stream there probably is as much as 60 inches per annum, while at the headwaters the precipitation is 100 inches or more. Except on the headwaters all of this falls as rain during the nine months of the year from September to May.

Little irrigation has been practiced in the Umpqua Valley, although a few small ditches may be found on the smaller creeks of the North and South forks. The agricultural products consist of grain and fruits. For the production of apples, prunes, and similar fruits, the climate and soil are especially well adapted. Although the possibilities for water-power development in this area are almost phenomenal, there are no important plants.

There is a remarkable difference between the run-off of the North and South forks of the Umpqua which would have been very difficult to detect except through actual records of stream flow. The annual run-off of the North Fork is 4 second-feet per square mile, whereas that of the South Fork is 1.6 second-feet per square mile. Since records have been kept highest run-off values were shown in 1907. It is probable that 1905 was a year of low run-off, although the records do not cover that period.

SOUTH UMPQUA RIVER NEAR BROCKWAY, OREG.

Location.—In sec. 15, T. 28 S., R. 6 W., at Winston's bridge, 6 miles south of Roseburg, 3 miles below Lookingglass Creek, 10 miles below Myrtle Creek, 3 miles east of Brockway, and 18 miles above the mouth of North Umpqua.

Records presented.—December 6, 1905, to September 30, 1910.

Drainage area.—1,800 square miles.

Gage.—Staff gage in two sections, the lower section inclined and the upper vertical.

Channel.—One channel at all stages. Bed of stream at control, one-fourth mile below station, composed of bowlders; fairly permanent. Good measuring section.

Discharge measurements.—Made from highway bridge at gage; prior to January, 1907, made from cable 300 feet below the bridge.

Accuracy.—Results good.

Discharge measurements of South Umpqua River near Brockway, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.				1907.			
Dec. 28	L. R. Allen.....	4.16	3,000	Mar. 7	I. E. Oakes.....	3.50	2,710
1906.				Sept. 30	E. F. Kriegsmann.....	.25	215
Feb. 1	L. R. Allen.....	4.32	3,490	Dec. 14	C. E. Ellsworth.....	7.55	11,300
Mar. 21	do.....	3.60	2,390	1908.			
May 2	do.....	2.82	1,500	Nov. 8	H. D. McGlashan.....	.76	343
29	do.....	8.77	14,800	1910.			
29	do.....	8.40	13,800	Aug. 30	F. C. Ebert.....	-.40	82.2
July 13	do.....	.95	442				
Aug. 9	do.....	.22	205				
Sept. 14	I. E. Oakes.....	.78	414				

Daily gage height, in feet, of South Umpqua River near Brockway, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1				4.4	4.35	6.25	5.9	3.0	5.1	1.65	0.4	0.05
2				3.6	4.1	5.55	5.35	2.8	4.4	1.55	.35	.05
3				3.25	4.0	5.05	4.9	2.75	4.1	1.55	.35	.05
4				3.0	3.75	5.0	4.7	2.65	4.1	1.4	.35	.05
5				3.15	3.5	4.75	4.45	2.6	3.9	1.3	.35	.05
6			1.9	3.2	3.35	4.7	4.2	2.5	3.25	1.3	.35	.05
7			1.9	3.15	3.2	4.6	4.0	2.45	3.25	1.2	.3	.05
8			2.3	3.1	3.05	4.6	3.75	2.3	3.4	1.2	.25	.05
9			2.1	4.7	2.95	4.5	3.7	2.25	3.95	1.1	.25	.05
10			1.4	5.25	2.85	4.35	3.7	2.25	4.1	1.05	.25	.1
11			1.4	4.5	2.75	4.2	3.45	2.25	4.1	1.05	.2	.15
12			1.35	6.45	2.6	4.0	3.25	2.2	4.0	1.0	.2	.25
13			1.2	8.2	2.55	3.75	3.1	2.1	3.8	.95	.2	.45
14			1.15	6.75	2.5	3.55	2.9	2.1	3.55	.95	.2	.6
15			1.1	6.6	3.0	3.35	2.9	2.7	3.3	.85	.15	.8
16			1.05	18.1	3.0	3.2	2.9	3.6	3.3	.8	.15	.9
17			1.05	9.9	3.05	3.05	2.8	3.4	3.3	.8	.15	.9
18			1.1	7.4	3.65	2.9	2.7	3.15	3.1	.8	.1	.85
19			1.45	6.0	6.2	3.0	2.6	2.95	2.85	.75	.1	.75
20			3.65	5.35	9.05	3.1	2.55	2.7	2.65	.7	.05	.6
21			3.3	4.4	10.7	3.5	2.55	2.55	2.5	.65	.05	.4
22			2.65	4.45	10.3	3.95	2.65	2.75	2.4	.65	.05	.3
23			2.2	4.65	8.3	4.15	2.75	3.4	2.25	.6	.05	.35
24			1.85	6.65	8.0	4.0	2.8	3.2	2.15	.6	.05	.4
25			1.1	6.3	7.3	4.0	2.8	3.0	2.05	.55	.05	.45
26			2.65	5.8	7.25	4.05	2.8	3.0	1.9	.55	.05	.45
27			4.4	5.1	8.5	4.05	2.75	3.4	1.9	.5	.05	.3
28			4.1	4.75	7.3	3.8	3.2	3.7	1.9	.5	.05	.25
29			3.4	4.4		3.6	3.3	9.1	1.85	.45	.05	.25
30			4.35	4.15		3.45	3.15	7.4	1.75	.45	.05	.25
31			6.1	4.4		4.25		6.0		.4	.05	
1906-7.												
1	0.25	0.3	1.25	4.5	10.2	4.4	5.75	2.65	1.7	.85	.25	.25
2	.25	.3	1.15	4.2	13.1	4.5	5.6	2.55	1.7	.8	.25	.2
3	.25	.35	1.35	4.3	14.5	4.4	5.0	2.5	1.65	.8	.25	.2
4	.25	.4	1.2	24.0	19.3	4.15	4.65	2.5	1.55	.75	.2	.2
5	.25	2.0	1.2	12.0	17.9	3.95	5.1	2.45	1.5	.75	.2	.2
6	.25	2.1	1.25	8.0	13.5	3.7	6.35	2.4	1.45	.75	.2	.2
7	.2	2.8	1.6	6.6	9.5	3.5	17.1	2.35	1.4	.7	.25	.2
8	.2	3.1	4.0	5.5	7.85	3.4	10.9	2.3	1.35	.65	.3	.15
9	.15	2.8	4.1	4.9	6.7	3.5	8.45	2.25	1.3	.65	.5	.15
10	.15	2.6	4.4	4.5	6.1	3.35	7.7	2.25	1.3	.65	.7	.1
11	.15	1.9	5.8	4.25	5.65	3.3	7.35	2.45	1.35	.65	.7	.1
12	.2	1.65	5.0	4.15	5.2	3.25	6.05	2.5	1.75	.65	.65	.1
13	.3	1.45	4.1	4.05	4.85	3.15	6.15	2.45	1.75	.6	.5	.15
14	.35	1.35	3.5	3.7	4.6	3.05	5.75	2.3	1.8	.55	.4	.1
15	.35	1.1	3.5	3.65	4.3	2.9	5.3	2.15	1.8	.5	.35	.1
16	.35	4.35	5.25	3.5	4.05	2.9	4.9	2.1	1.8	.5	.35	.15
17	.45	3.95	4.65	3.3	3.45	2.8	4.55	2.1	1.7	.5	.25	.15
18	1.05	5.3	4.05	3.15	3.35	11.5	4.2	2.1	1.6	.5	.25	.25
19	1.00	4.2	4.0	3.2	3.35	10.1	4.45	2.2	1.5	.5	.2	.25
20	.95	3.6	4.4	3.15	3.3	13.0	4.0	2.5	1.45	.45	.2	.25
21	.75	3.1	4.4	3.05	3.3	9.4	3.8	2.4	1.3	.4	.2	.15
22	.75	3.95	3.9	3.0	3.25	7.6	3.65	2.45	1.25	.4	.2	.15
23	.65	3.6	3.5	3.15	3.6	7.9	3.4	2.4	1.25	.4	.25	.15
24	.65	3.1	3.35	3.6	4.4	7.7	3.3	2.4	1.15	.35	.25	.15
25	.5	2.75	3.6	4.15	4.6	6.9	3.25	2.3	1.1	.3	.3	.1
26	.45	2.3	6.55	4.3	5.3	6.4	3.2	2.1	1.05	.3	.3	.1
27	.45	2.05	5.8	5.0	4.85	5.9	3.1	2.0	1.05	.3	.35	.1
28	.4	1.75	4.85	5.3	4.4	5.6	2.95	1.9	1.0	.3	.35	.1
29	.4	1.65	4.3	10.3		5.4	2.85	1.8	.95	.25	.25	.15
30	.35	1.4	3.95	8.7		5.4	2.75	1.8	.85	.25	.2	.15
31	.35		4.9	8.65		5.65		1.75		.25	.2	

Daily gage height, in feet, of South Umpqua River near Brockway, Oreg., for 1905-1910--
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	0.4	0.75	2.35	7.2	3.1	4.85	3.85	2.65	2.15	1.5	0.3	0.1
2.....	1.0	.9	2.2	7.0	3.0	4.95	3.9	2.6	2.05	1.4	.3	.05
3.....	.9	1.0	2.0	7.3	3.0	4.1	3.9	2.55	2.1	1.35	.25	.05
4.....	.7	.95	1.8	7.1	2.9	3.9	4.0	2.45	2.1	1.3	.25	.05
5.....	.5	.85	2.15	5.7	2.8	3.8	3.95	2.4	2.0	1.25	.25	.05
6.....	.4	.8	3.0	5.0	3.5	3.7	3.7	2.35	1.95	1.2	.25	.05
7.....	.35	.75	3.05	4.65	8.1	3.65	3.5	2.45	1.95	1.15	.2	.05
8.....	.3	.6	3.1	4.45	6.8	3.65	3.3	2.65	1.95	1.15	.2	.05
9.....	.3	.5	3.3	8.0	6.6	3.7	3.15	2.8	2.0	1.05	.2	.05
10.....	.25	.45	3.3	8.15	6.4	3.9	3.1	2.7	2.1	1.05	.2	.05
11.....	.25	.35	4.3	7.1	6.15	4.4	3.1	2.6	2.2	1.0	.2	.05
12.....	.2	.3	4.45	6.0	6.0	4.6	3.1	2.5	2.2	.95	.2	.05
13.....	.2	.3	9.3	5.65	5.8	4.7	3.15	2.4	2.1	.9	.15	.05
14.....	.2	.3	8.0	5.8	5.75	4.7	3.25	2.35	2.0	.85	.15	.05
15.....	.15	.6	5.6	6.65	5.65	4.75	3.25	2.45	1.9	.8	.15	.05
16.....	.15	.65	4.3	6.0	5.45	5.6	3.25	3.0	1.85	.75	.15	.05
17.....	.15	.7	3.8	5.9	5.15	6.5	3.3	3.2	1.8	.7	.15	.0
18.....	.1	.6	3.6	5.75	4.9	6.2	3.35	3.15	1.7	.65	.15	.0
19.....	.1	.6	3.6	5.65	4.7	5.4	3.25	3.9	1.7	.65	.1	.0
20.....	.1	.75	5.9	7.0	4.65	4.95	3.2	3.7	2.0	.6	.1	.0
21.....	.1	1.3	5.8	6.65	4.3	4.4	3.25	3.55	2.6	.6	.1	.0
22.....	.1	1.8	8.0	6.0	3.75	4.1	3.15	3.4	3.1	.55	.1	.0
23.....	.1	3.1	11.7	5.7	3.5	3.75	3.05	3.45	2.7	.55	.1	.0
24.....	.15	2.8	10.8	5.0	3.45	3.65	3.0	2.55	2.3	.5	.1	.0
25.....	.2	2.85	15.0	4.45	3.4	3.65	3.15	2.65	2.2	.5	.1	.0
26.....	.2	2.9	19.5	4.1	3.35	3.6	3.25	2.6	1.9	.45	.1	.0
27.....	.2	2.95	14.3	3.8	3.35	3.5	3.1	2.6	1.7	.4	.1	.0
28.....	.2	2.9	9.3	3.6	3.65	3.4	2.9	2.45	1.7	.35	.15	.0
29.....	.25	2.85	7.9	3.3	3.8	3.3	2.8	2.35	1.6	.35	.15	.0
30.....	.55	2.8	6.4	3.25	.....	3.4	2.7	2.3	1.55	.35	.15	.0
31.....	.7	.....	7.0	3.15	.....	3.6	.....	2.35	.....	.3	.1	.....
1908-9.												
1.....	.1	1.4	2.45	3.55	5.05	6.1	3.4	2.3	2.6	0.7	0.2	.....
2.....	.1	1.3	2.3	3.7	5.15	5.65	3.35	2.25	2.5	.65	.2	.....
3.....	.1	1.25	2.2	4.4	9.2	5.45	3.3	2.25	2.45	.6	.2	.....
4.....	.1	1.15	2.15	6.9	7.8	5.45	3.25	2.5	2.3	.6	.15	.....
5.....	.1	1.0	1.95	7.95	6.9	5.4	3.25	2.45	2.15	.55	.15	.....
6.....	.1	.9	1.85	10.0	6.55	5.2	3.15	2.3	2.0	.65	.15	.....
7.....	.1	.85	1.65	12.1	6.25	4.9	3.05	2.2	1.8	1.0	.15	.....
8.....	.0	.76	1.6	12.2	5.9	4.9	2.9	2.1	1.65	1.0	.15	.....
9.....	.0	.75	1.5	9.3	5.65	4.9	2.85	2.05	1.55	.9	.1	.....
10.....	.0	.75	1.45	6.9	6.25	4.9	2.8	2.0	1.45	.8	.1	.....
11.....	.0	.65	1.3	5.95	5.9	4.75	2.8	2.0	1.4	.7	.1	.....
12.....	.0	.6	1.3	5.1	5.75	4.35	2.8	2.0	1.35	.65	.1	.....
13.....	.0	.6	1.3	4.75	6.95	4.1	2.75	1.95	1.3	.6	.1	.....
14.....	.25	.55	2.05	5.05	6.9	4.0	2.7	1.9	1.3	.6	.1	.....
15.....	4.05	.55	2.15	10.9	6.75	3.95	2.65	1.85	1.25	.55	.1	.....
16.....	3.0	.5	2.1	18.7	6.75	3.95	2.65	1.8	1.35	.5	.1	.....
17.....	2.8	.5	1.95	11.15	9.3	3.95	2.6	1.8	1.4	.45	.1	.....
18.....	1.9	.6	1.75	12.1	8.0	3.9	2.6	1.75	1.35	.4	.05	.....
19.....	1.6	.85	1.65	9.9	8.5	3.8	2.55	1.75	1.3	.4	.05	.....
20.....	1.75	1.6	1.5	13.6	8.25	3.75	2.55	1.65	1.2	.4	.05	.....
21.....	2.65	3.0	1.75	14.65	8.05	3.6	2.5	1.6	1.1	.35	.05	.....
22.....	2.2	4.0	2.0	13.0	7.0	3.45	2.4	1.6	1.05	.35	.05	.....
23.....	2.0	4.7	2.6	9.45	6.3	3.35	2.3	1.55	1.0	.3	.05	.....
24.....	1.6	5.0	5.35	7.5	6.05	3.3	2.25	1.55	.95	.3	.05	.....
25.....	1.5	4.5	4.7	5.15	7.6	3.2	2.2	1.5	.9	.25	.....	.....
26.....	1.35	4.45	4.65	5.2	6.7	3.15	2.15	1.45	.85	.25	.....	.....
27.....	1.25	3.7	4.65	5.1	6.45	3.15	2.05	1.5	.8	.25	.....	.....
28.....	1.2	3.4	4.4	4.8	6.2	3.15	2.15	2.0	.75	.25	.....	.05
29.....	1.1	2.9	5.45	4.6	.....	3.2	2.5	2.3	.75	.25	.....	.1
30.....	1.0	2.5	4.85	4.65	.....	3.55	2.5	2.55	.7	.25	.....	.2
31.....	1.5	.....	4.05	5.0	.....	3.45	.....	2.65	.....	.2	.....	.....

Daily gage height, in feet, of South Umpqua River near Brockway, Oreg., for 1905-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.	0.3	3.9	7.1	3.95	5.9	10.8	3.1	2.35	1.05	0.65	-----	-----
2.	.5	3.7	6.25	4.25	5.8	9.2	3.05	2.25	1.05	.6	-----	-----
3.	.6	2.95	5.4	4.15	5.7	7.6	3.05	2.15	1.0	.55	-----	-----
4.	.6	2.7	5.15	3.95	5.5	6.85	3.05	2.15	1.0	.5	-----	-----
5.	.55	2.55	4.2	3.8	4.75	6.2	3.0	2.15	.95	.6	-----	-----
6.	.4	2.3	4.3	3.65	4.35	5.55	3.0	2.15	.95	.45	-----	-----
7.	.35	2.25	4.5	3.75	4.15	5.05	3.0	2.1	.9	.45	-----	-----
8.	.3	2.2	5.6	3.9	3.9	4.7	2.95	2.0	.7	.45	-----	-----
9.	.3	2.35	11.3	3.75	3.75	4.4	2.95	1.9	.75	.45	-----	-----
10.	.25	3.4	9.25	3.35	3.9	4.2	2.95	2.35	.85	.4	-----	-----
11.	.25	3.4	7.9	3.25	4.0	4.1	3.05	2.6	.85	.4	-----	-----
12.	.2	3.2	7.3	3.2	4.0	4.05	3.2	2.4	.85	.35	-----	-----
13.	.2	2.9	9.1	3.2	3.95	4.1	3.05	2.2	.85	.3	-----	-----
14.	.15	2.8	7.6	3.15	4.0	4.1	2.9	2.1	.85	.3	-----	-----
15.	.1	2.75	6.85	3.15	4.25	4.05	2.7	2.0	.9	.3	-----	-----
16.	.1	2.5	6.18	3.1	4.15	4.0	2.6	1.85	.95	.3	-----	-----
17.	.1	2.35	5.75	3.1	4.15	3.8	2.5	1.7	.95	.3	-----	-----
18.	.15	2.25	4.65	3.15	4.2	3.65	2.5	1.6	.95	.2	-----	-----
19.	.35	2.5	4.3	3.5	7.4	3.5	2.5	1.5	.9	.15	-----	-----
20.	.5	7.5	3.9	3.55	7.1	3.7	2.6	1.45	.85	.15	-----	-----
21.	.6	9.0	3.7	3.7	6.4	3.75	2.65	1.4	.85	.15	-----	-----
22.	.8	9.05	3.25	4.9	5.55	3.75	2.5	1.35	.8	.1	-----	-----
23.	.75	24.5	3.2	6.05	5.1	5.4	2.4	1.25	.8	.1	-----	-----
24.	.7	15.2	3.15	6.9	5.05	5.2	2.3	1.25	.8	.05	-----	-----
25.	.65	10.05	3.1	6.45	9.2	4.9	2.3	1.2	.8	.05	-----	-----
26.	.6	7.15	3.0	6.45	8.1	4.65	2.3	1.2	.75	.05	-----	-----
27.	.6	7.15	2.9	6.3	7.05	4.0	2.25	1.15	.75	.05	-----	-----
28.	.7	6.1	2.6	6.2	8.45	3.65	2.15	1.15	.7	.05	-----	-----
29.	1.0	6.15	2.25	6.7	-----	3.4	2.1	1.15	.7	.05	-----	-----
30.	1.25	7.6	2.35	6.2	-----	3.3	2.05	1.1	.65	-----	-0.4	-----
31.	1.7	-----	3.25	6.0	-----	3.15	-----	1.1	-----	-----	-----	-----

NOTE.—No ice at this station. Gage heights Aug. 25 to Sept. 27, 1909, and July 30 to Aug. 29, and Aug. 31 to Sept. 30, 1910, are below the zero of the gage, but were erroneously recorded by the observer, and hence are not published.

Daily discharge, in second-feet, of South Umpqua River near Brockway, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	-----	-----	-----	3,540	3,460	7,580	6,690	1,700	4,850	740	260	171
2.	-----	-----	-----	2,340	3,050	5,840	5,290	1,520	3,540	692	246	171
3.	-----	-----	-----	1,950	2,900	4,750	4,450	1,480	3,050	692	246	171
4.	-----	-----	-----	1,700	2,540	4,650	4,070	1,400	3,050	627	246	171
5.	-----	-----	-----	1,850	2,220	4,160	3,620	1,360	2,750	585	246	171
6.	-----	-----	880	1,900	2,060	4,070	3,210	1,280	1,950	585	246	171
7.	-----	-----	880	1,850	1,900	3,890	2,900	1,240	1,950	544	232	171
8.	-----	-----	1,140	1,800	1,750	3,890	2,540	1,140	2,110	544	219	171
9.	-----	-----	1,000	4,070	1,650	3,710	2,470	1,100	2,820	504	219	171
10.	-----	-----	627	5,170	1,560	3,460	2,470	1,100	3,050	484	219	182
11.	-----	-----	627	3,710	1,480	3,210	2,160	1,100	3,050	484	206	194
12.	-----	-----	606	8,100	1,360	2,900	1,950	1,070	2,900	465	206	219
13.	-----	-----	544	13,100	1,320	2,540	1,800	1,000	2,610	445	206	275
14.	-----	-----	524	8,910	1,280	2,280	1,610	1,000	2,280	445	206	321
15.	-----	-----	504	8,510	1,700	2,060	1,610	1,440	2,000	407	194	389
16.	-----	-----	484	46,400	1,700	1,900	1,610	2,340	2,000	389	194	426
17.	-----	-----	484	18,400	1,750	1,750	1,520	2,110	2,000	389	194	426
18.	-----	-----	504	10,800	2,400	1,610	1,440	1,850	1,800	389	182	407
19.	-----	-----	648	6,940	7,450	1,700	1,360	1,650	1,560	371	182	371
20.	-----	-----	2,400	5,390	15,800	1,800	1,320	1,440	1,400	354	171	321
21.	-----	-----	2,000	3,540	21,000	2,220	1,320	1,320	1,280	337	171	260
22.	-----	-----	1,400	3,620	19,700	2,820	1,400	1,480	1,210	337	171	232
23.	-----	-----	1,070	3,980	13,400	3,130	1,480	2,110	1,100	321	171	246
24.	-----	-----	850	8,640	12,500	2,900	1,520	1,900	1,040	321	171	260
25.	-----	-----	504	7,710	10,500	2,900	1,520	1,700	972	305	171	275
26.	-----	-----	1,400	6,440	10,300	2,980	1,520	1,700	880	305	171	275
27.	-----	-----	3,540	4,850	14,000	2,980	1,480	2,110	880	290	171	232
28.	-----	-----	3,050	4,160	10,500	2,610	1,900	2,470	880	290	171	219
29.	-----	-----	2,110	3,540	-----	2,340	2,000	15,900	850	275	171	219
30.	-----	-----	3,460	3,130	-----	2,160	1,850	10,800	792	275	171	219
31.	-----	-----	7,190	3,540	-----	3,290	-----	6,940	-----	260	171	-----

Daily discharge, in second-feet, of South Umpqua River near Brockway, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1	219	232	564	3,710	19,400	3,540	6,320	1,400	765	408	219	219
2	219	232	524	3,210	28,900	3,710	5,960	1,320	765	389	219	206
3	219	246	606	3,370	33,700	3,540	4,650	1,280	740	389	219	206
4	219	260	544	68,800	50,900	3,130	3,980	1,280	692	372	206	206
5	219	940	544	25,300	45,600	2,820	4,850	1,240	670	372	206	206
6	219	1,000	564	12,500	30,300	2,470	7,840	1,210	648	372	206	206
7	206	1,520	715	8,510	17,200	2,220	42,800	1,180	627	354	219	206
8	206	1,800	2,900	5,730	12,100	2,110	21,660	1,140	606	338	232	194
9	194	1,520	3,050	4,450	8,780	2,220	13,900	1,100	585	338	290	194
10	194	1,360	3,540	3,710	7,190	2,060	11,600	1,100	585	338	354	182
11	194	880	6,440	3,290	6,080	2,000	10,600	1,240	606	338	354	182
12	206	740	4,650	3,130	5,060	1,950	8,640	1,280	792	338	338	182
13	232	648	3,050	2,980	4,360	1,850	7,320	1,240	792	321	290	194
14	246	606	2,220	2,470	3,890	1,750	6,320	1,140	820	306	260	182
15	246	504	2,220	2,400	3,370	1,610	5,280	1,040	820	290	246	182
16	246	3,460	5,170	2,220	2,980	1,610	4,450	1,000	820	290	246	194
17	275	2,820	3,980	2,000	2,160	1,520	3,800	1,000	765	290	219	194
18	484	5,280	2,980	1,850	2,060	23,600	3,210	1,000	715	290	219	219
19	465	3,210	2,900	1,900	2,060	19,100	3,620	1,070	670	290	206	219
20	446	2,340	3,540	1,850	2,000	28,600	2,900	1,280	648	275	206	219
21	372	1,800	3,540	1,750	2,000	16,800	2,610	1,210	585	260	206	194
22	372	2,820	2,750	1,700	1,950	11,300	2,400	1,240	564	260	206	194
23	338	2,340	2,220	1,850	2,340	12,200	2,110	1,210	564	260	219	194
24	338	1,800	2,060	2,340	3,540	11,600	2,000	1,210	524	246	219	194
25	290	1,480	2,340	3,130	3,890	9,330	1,950	1,140	504	232	232	182
26	275	1,140	8,380	3,370	5,280	7,970	1,900	1,000	484	232	232	182
27	275	972	6,440	4,650	4,360	6,690	1,800	940	484	232	246	182
28	260	792	4,360	5,280	3,540	5,960	1,660	880	465	232	246	182
29	260	740	3,370	19,700	-----	5,500	1,560	820	446	219	219	194
30	246	627	2,820	14,700	-----	5,500	1,480	820	408	219	206	194
31	246	-----	4,450	14,500	-----	6,080	-----	792	-----	219	206	-----
1907-8.												
1	260	372	1,180	10,200	1,800	4,360	2,680	1,400	1,040	670	232	182
2	465	426	1,070	9,610	1,700	4,550	2,750	1,360	972	627	232	171
3	426	465	940	10,500	1,700	3,050	2,750	1,320	1,000	606	219	171
4	354	446	820	9,890	1,610	2,750	2,900	1,240	1,000	585	219	171
5	290	408	1,040	6,200	1,520	2,610	2,820	1,210	940	564	219	171
6	260	389	1,700	4,650	2,220	2,470	2,470	1,180	910	544	219	171
7	246	372	1,750	3,980	12,500	2,400	2,220	1,240	910	524	206	171
8	232	321	1,800	3,620	9,050	2,400	2,000	1,400	910	524	206	171
9	232	290	2,000	12,500	8,510	2,470	1,850	1,520	940	484	206	171
10	219	275	2,000	13,000	7,970	2,750	1,800	1,440	1,000	484	206	171
11	219	246	3,370	9,890	7,320	3,540	1,800	1,360	1,070	465	206	171
12	206	232	3,620	6,940	6,940	3,890	1,800	1,280	1,070	446	206	171
13	206	232	16,500	6,080	6,440	4,070	1,850	1,210	1,000	426	194	171
14	206	232	12,500	6,440	6,320	4,070	1,950	1,180	940	408	194	171
15	194	321	5,960	8,640	6,080	4,160	1,950	1,240	880	389	194	171
16	194	338	3,370	6,940	5,620	5,960	1,950	1,700	850	372	194	171
17	194	354	2,610	6,690	4,960	8,240	2,000	1,900	820	354	194	160
18	182	321	2,340	6,320	4,450	7,450	2,060	1,850	765	338	194	160
19	182	321	2,340	6,080	4,070	5,500	1,950	2,750	765	338	182	160
20	182	372	6,690	9,610	3,980	4,550	1,900	2,470	940	321	182	160
21	182	585	6,440	8,640	3,370	3,540	1,950	2,280	1,360	321	182	160
22	182	820	12,500	6,940	2,540	3,050	1,850	2,110	1,800	306	182	160
23	182	1,800	24,300	6,200	2,220	2,540	1,750	2,160	1,440	306	182	160
24	194	1,520	21,300	4,650	2,160	2,400	1,700	1,320	1,140	290	182	160
25	206	1,560	35,400	3,620	2,110	2,400	1,850	1,400	1,070	290	182	160
26	206	1,610	51,700	3,050	2,060	2,340	1,950	1,360	880	275	182	160
27	206	1,660	33,000	2,610	2,060	2,220	1,800	1,360	765	260	182	160
28	206	1,610	16,500	2,340	2,400	2,110	1,610	1,240	765	246	194	160
29	219	1,560	12,200	2,000	2,610	2,000	1,520	1,180	715	246	194	160
30	306	1,520	7,970	1,950	-----	2,110	1,440	1,140	692	246	194	160
31	354	-----	9,610	1,850	-----	2,340	-----	1,180	-----	232	182	-----

Daily discharge, in second-feet, of South Umpqua River near Brockway, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	182	627	1,240	2,280	4,750	7,190	2,110	1,140	1,360	354	206	160
2.....	182	585	1,140	2,470	4,960	6,080	2,060	1,100	1,280	338	206	160
3.....	182	564	1,070	3,540	16,200	5,620	2,000	1,100	1,240	321	206	160
4.....	182	524	1,040	9,330	11,900	5,620	1,950	1,280	1,140	321	194	160
5.....	182	465	910	12,400	9,330	5,500	1,950	1,240	1,040	306	194	160
6.....	182	426	850	18,800	8,380	5,060	1,850	1,140	940	338	194	160
7.....	182	408	740	25,600	7,580	4,450	1,750	1,070	820	465	194	160
8.....	160	375	715	25,900	6,690	4,450	1,610	1,000	740	465	194	160
9.....	160	372	670	16,500	6,080	4,450	1,560	972	692	426	182	160
10.....	160	372	648	9,330	7,580	4,450	1,520	940	648	389	182	160
11.....	160	338	585	6,820	6,690	4,160	1,520	940	627	354	182	160
12.....	160	321	585	4,850	6,320	3,460	1,520	940	606	338	182	160
13.....	160	321	585	4,160	9,470	3,050	1,480	910	585	321	182	160
14.....	219	306	972	4,750	9,330	2,900	1,440	880	585	321	182	160
15.....	2,980	306	1,040	21,600	8,920	2,820	1,400	850	564	306	182	160
16.....	1,700	290	1,000	48,700	8,920	2,820	1,400	820	606	290	182	160
17.....	1,520	290	910	22,500	16,500	2,820	1,360	820	627	275	182	160
18.....	880	321	792	25,600	12,500	2,750	1,360	792	606	260	171	160
19.....	715	408	740	18,400	14,000	2,610	1,320	792	585	260	171	160
20.....	792	715	670	30,600	13,300	2,540	1,320	740	544	260	171	160
21.....	1,400	1,700	792	34,200	12,700	2,340	1,280	715	504	246	171	160
22.....	1,070	2,900	940	28,600	9,610	2,160	1,210	715	484	246	171	160
23.....	940	4,070	1,360	17,000	7,710	2,060	1,140	692	465	232	171	160
24.....	715	4,650	5,390	11,000	7,060	2,000	1,100	692	446	232	171	160
25.....	670	3,710	4,070	4,960	11,300	1,900	1,070	670	426	219	160	160
26.....	606	3,620	3,980	5,060	8,780	1,850	1,040	648	408	219	160	160
27.....	564	2,470	3,980	4,850	8,100	1,850	972	670	389	219	160	160
28.....	544	2,116	3,540	4,260	7,450	1,850	1,040	940	372	219	160	171
29.....	504	1,610	5,620	3,890	-----	1,900	1,280	1,140	372	219	160	182
30.....	465	1,280	4,360	3,980	-----	2,280	1,280	1,320	354	219	160	206
31.....	670	-----	2,980	4,650	-----	2,160	-----	1,400	-----	206	160	-----
1909-10.												
1.....	232	2,750	9,890	2,820	6,690	21,300	1,800	1,180	484	336	141	82
2.....	290	2,470	7,580	3,290	6,440	16,200	1,750	1,100	484	318	141	82
3.....	321	1,660	5,500	3,130	6,200	11,400	1,750	1,040	465	301	141	90
4.....	321	1,440	4,960	2,820	5,730	9,210	1,750	1,040	465	284	132	90
5.....	306	1,320	3,210	2,610	4,160	7,470	1,700	1,040	447	284	132	90
6.....	260	1,140	3,370	2,400	3,460	5,840	1,700	1,040	447	267	132	98
7.....	246	1,100	3,710	2,540	3,130	4,750	1,700	1,000	428	267	123	98
8.....	232	1,070	5,960	2,750	2,750	4,070	1,660	940	354	267	123	98
9.....	232	1,180	23,000	2,540	2,540	3,540	1,660	880	372	267	123	98
10.....	219	2,110	16,400	2,060	2,750	3,210	1,660	1,180	409	250	123	106
11.....	219	2,110	12,200	1,950	2,900	3,050	1,750	1,360	409	250	114	106
12.....	206	1,900	10,500	1,900	2,900	2,980	1,900	1,210	409	235	114	106
13.....	206	1,610	15,900	1,900	2,820	3,050	1,750	1,070	409	220	114	106
14.....	194	1,520	11,300	1,850	2,900	3,050	1,610	1,000	409	220	114	114
15.....	182	1,480	9,190	1,850	3,290	2,980	1,440	940	428	220	106	114
16.....	182	1,280	7,400	1,800	3,130	2,900	1,360	850	447	220	106	114
17.....	182	1,180	6,320	1,800	3,130	2,610	1,280	765	447	220	106	114
18.....	194	1,100	3,980	1,850	3,210	2,400	1,280	715	447	194	106	123
19.....	246	1,280	3,370	2,220	10,800	2,220	1,280	670	428	182	98	123
20.....	290	11,000	2,750	2,280	9,900	2,470	1,360	648	409	182	98	123
21.....	321	15,600	2,470	2,470	8,010	2,540	1,400	627	409	182	98	123
22.....	389	15,800	1,950	4,460	5,840	2,540	1,280	606	390	170	98	132
23.....	372	70,700	1,900	7,070	4,860	5,500	1,210	564	390	170	98	132
24.....	354	36,100	1,850	9,340	4,750	5,060	1,140	564	390	160	90	132
25.....	338	18,900	1,800	8,120	16,200	4,450	1,140	544	390	160	90	141
26.....	321	10,000	1,700	8,120	12,800	3,980	1,140	544	372	160	90	141
27.....	321	10,000	1,610	7,740	9,760	2,900	1,100	524	372	160	90	141
28.....	354	7,190	1,360	7,470	13,900	2,400	1,040	524	354	160	90	141
29.....	465	7,320	1,100	8,810	-----	2,110	1,000	524	354	160	82	150
30.....	504	11,300	1,180	7,470	-----	2,000	972	504	336	150	82	150
31.....	765	-----	1,950	6,940	-----	1,850	-----	504	-----	150	82	-----

NOTE.—Daily discharge determined as follows: 1905 to 1909, from rating curves well defined between 206 and 15,600 second-feet; discharge Aug. 25 to Sept. 27, 1909, estimated at 160 second-feet, but daily flow during part of this period was probably lower; 1910, from curve well defined between 80 and 15,000 second-feet; July 30 to Oct. 2, interpolated from discharge measurement made Aug. 30 at stage -0.4 foot.

Monthly discharge of South Umpqua River near Brockway, Oreg., for 1905-1910.

[Drainage area, 1,800 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905-6.							
December 6-31.....	7,190	484	1,480	0.822	0.795	76,300	A.
January.....	46,400	1,700	6,760	3.76	4.34	416,000	A.
February.....	21,000	1,280	6,120	3.40	3.54	340,000	A.
March.....	7,580	1,610	3,160	1.76	2.03	194,000	A.
April.....	6,660	1,320	2,340	1.30	1.45	139,000	A.
May.....	15,900	1,000	2,450	1.38	1.59	152,000	A.
June.....	4,850	792	2,020	1.12	1.25	120,000	A.
July.....	740	260	434	.241	.28	26,700	A.
August.....	260	171	200	.111	.13	12,300	A.
September.....	426	171	250	.139	.16	14,900	A.
The period.....						1,490,000	
1906-7.							
October.....	484	194	272	.151	.17	16,700	A.
November.....	5,280	232	1,470	.817	.91	87,500	A.
December.....	8,380	524	3,010	1.67	1.92	185,000	A.
January.....	68,800	1,700	7,620	4.23	4.88	469,000	A.
February.....	50,900	1,950	11,200	6.22	6.48	622,000	A.
March.....	28,600	1,520	6,790	3.77	4.35	418,000	A.
April.....	42,800	1,480	6,640	3.69	4.12	395,000	A.
May.....	1,400	792	1,120	.622	.72	68,900	A.
June.....	820	408	639	.355	.40	38,000	A.
July.....	408	219	300	.167	.19	18,400	A.
August.....	354	206	238	.132	.15	14,600	A.
September.....	219	182	196	.109	.12	11,700	A.
The year.....	68,800	182	3,290	1.83	24.41	2,340,000	
1907-8.							
October.....	465	182	238	.132	.15	14,600	A.
November.....	1,800	232	699	.388	.43	41,600	A.
December.....	51,700	820	9,820	5.46	6.30	604,000	A.
January.....	13,000	1,850	6,500	3.61	4.16	400,000	A.
February.....	12,800	1,520	4,370	2.43	2.62	251,000	A.
March.....	8,240	2,000	3,490	1.94	2.24	215,000	A.
April.....	2,900	1,440	2,030	1.13	1.26	121,000	A.
May.....	2,750	1,140	1,520	.844	.97	93,500	A.
June.....	1,800	692	978	.543	.61	58,200	A.
July.....	670	232	403	.224	.26	24,800	B.
August.....	232	182	198	.110	.13	12,200	B.
September.....	182	160	166	.092	.10	9,880	B.
The year.....	51,700	160	2,530	1.41	19.23	1,850,000	
1908-9.							
October.....	2,980	160	619	.344	.40	38,100	A.
November.....	4,650	290	1,220	.678	.76	72,600	A.
December.....	5,620	585	1,740	.967	1.11	107,000	A.
January.....	48,700	2,280	14,100	7.83	9.03	867,000	B.
February.....	16,500	4,750	9,360	5.20	5.42	520,000	B.
March.....	7,190	1,850	3,390	1.88	2.17	208,000	A.
April.....	2,110	972	1,460	.811	.90	86,900	A.
May.....	1,400	648	938	.521	.60	57,700	A.
June.....	1,360	354	668	.371	.41	39,700	A.
July.....	465	206	296	.164	.19	18,200	A.
August.....	206	160	179	.099	.11	11,000	B.
September.....	206	160	163	.091	.10	9,700	C.
The year.....	48,700	160	2,840	1.58	21.20	2,040,000	
1909-10.							
October.....	765	182	301	.167	.19	18,500	B.
November.....	70,700	1,070	8,120	4.51	5.03	483,000	B.
December.....	23,000	1,100	5,980	3.32	3.83	368,000	A.
January.....	9,340	1,800	4,010	2.23	2.57	247,000	A.
February.....	16,200	2,540	5,890	3.27	3.40	327,000	A.
March.....	21,300	1,850	4,840	2.69	3.10	298,000	A.
April.....	1,800	972	1,450	.806	.90	86,300	A.
May.....	1,360	504	829	.461	.53	51,000	A.
June.....	484	336	412	.229	.26	24,500	A.
July.....	336	150	218	.121	.14	13,400	A.
August.....	141	82	109	.061	.07	6,700	C.
September.....	150	82	115	.064	.07	6,840	C.
The year.....	70,700	82	2,690	1.49	20.09	1,980,000	

UMPQUA RIVER NEAR ELKTON, OREG.

Location.—In sec. 8, T. 23 S., R. 7 W., at the falls in the river, 4 miles south (by road) from Elkton, and 8 miles (by river) above Elk Creek.

Records presented.—October 18, 1905, to December 31, 1906; May 12, 1907, to September 30, 1910.

Drainage area.—3,680 square miles.

Gage.—Staff in 5 sections; low-water section inclined and other sections vertical. Datum lowered 0.52 foot September 3, 1910.

Channel.—Gravel; shifting not material.

Discharge measurements.—Made from ferry 100 feet below gage.

Accuracy.—Gage record reliable, except low-water periods prior to 1910, which are very uncertain; rating curve fairly well defined.

Cooperation.—Gage-height record furnished by J. G. Kelley, of Portland, Oreg.

Discharge measurements of Umpqua River near Elkton, Oreg., in 1906-7, 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1906. Aug. 11	L. R. Allen.....	Feet. 0.07	Sec.-ft. 1,340	1907. Dec. 16	C. E. Ellsworth.....	Feet. 5.40	Sec.-ft. 12,600
1907. May 31 Sept. 28	J. C. Stevens..... E. F. Kriegsman.....	2.09 -.04	3,920 1,270	1910. Sept. 2	F. C. Ebert.....	.27	1,060

Daily gage height, in feet, of Umpqua River near Elkton, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....		0.08	2.88	6.08	5.50	7.50	7.33	3.58	6.29	1.75	0.25	0.00
2.....		.00	2.38	6.08	5.00	6.17	6.58	3.29	5.46	1.75	.25	.00
3.....		.00	2.00	3.38	4.42	6.05	5.71	3.12	4.88	1.67	.17	.00
4.....		.00	2.33	3.46	4.50	5.75	5.29	3.00	4.88	1.50	.17	.00
5.....		.00	2.42	3.46	4.12	5.75	5.29	3.00	4.83	1.38	.17	.00
6.....		.00	2.67	3.38	3.79	5.05	4.62	3.05	4.58	1.33	.17	.00
7.....		.00	3.12	3.50	3.54	5.25	4.33	2.96	4.79	1.17	.17	.00
8.....		.00	3.08	3.50	3.29	5.25	4.17	2.75	4.88	1.00	.17	.00
9.....		.00	2.88	4.29	3.17	5.21	4.05	2.75	4.83	1.00	.17	.00
10.....		.00	2.38	6.88	3.05	5.12	4.17	2.58	4.83	.88	.17	.00
11.....		.00	1.96	5.62	2.96	5.00	3.88	2.75	5.38	.75	.17	.00
12.....		.00	1.67	5.29	2.79	5.00	3.54	2.71	4.75	.75	.17	.00
13.....		.00	1.38	9.88	2.62	5.00	3.21	2.58	4.50	.75	.17	.00
14.....		.00	1.21	8.88	2.50	5.00	3.12	2.46	4.08	.75	.08	.29
15.....		.00	1.12	8.17	2.62	4.17	3.00	2.54	4.25	.75	.08	1.17
16.....		.00	1.05	13.79	3.08	3.12	3.00	4.12	4.42	.62	.08	1.00
17.....		.00	.00	18.33	3.25	3.00	3.00	3.96	4.50	.54	.08	.75
18.....	0.08	.00	1.21	10.42	3.67	3.00	2.96	3.58	3.96	.50	.00	.54
19.....	.75	.00	1.42	8.46	6.88	3.00	2.67	3.38	3.62	.50	.00	.46
20.....	.50	.50	2.33	6.79	9.05	3.00	2.67	3.08	3.29	.50	.00	.42
21.....	.42	1.62	4.29	5.88	15.38	3.50	2.75	2.96	3.00	.46	.00	.33
22.....	.25	1.21	3.29	5.21	13.08	4.17	2.88	3.46	2.92	.42	.00	.25
23.....	.08	.62	2.54	5.05	11.62	4.50	3.08	4.46	2.67	.42	.00	.12
24.....	.08	.42	2.12	8.62	11.33	4.29	3.08	4.21	2.42	.33	.00	.08
25.....	.17	.29	1.42	8.29	11.38	4.17	3.08	3.46	2.25	.25	.00	.17
26.....	.17	.25	1.75	7.58	9.75	4.29	3.17	3.75	2.17	.25	.00	.17
27.....	.67	.25	6.00	6.62	10.88	4.46	3.33	3.88	2.00	.25	.00	.05
28.....	.71	1.42	5.71	5.83	8.62	4.12	3.75	4.58	2.00	.25	.00	.00
29.....	.58	1.29	4.46	5.38		3.96	4.00	13.21	2.00	.25	.00	.00
30.....	.58	1.88	4.08	4.54		3.75	3.88	10.25	1.96	.25	.00	.00
31.....	.38		8.29	5.42		3.75		8.50		.25	.00	

Daily gage height, in feet, of Umpqua River near Elkton, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	0.00	0.00	1.38						2.00	1.08		
2.....	.00	.00	1.29						1.96	1.00		
3.....	.00	.00	1.12						1.88	.92		
4.....	.00	.00	1.00						1.71	.88		
5.....	.00	.25	1.00						1.67	1.12		
6.....	.00	.12	1.05						1.67	1.21		0.08
7.....	.00	1.50	1.42						1.67	1.05	0.12	.17
8.....	.00	3.75	3.08						1.67	.88	.29	.29
9.....	.00	3.75	5.21						1.67	.79	.38	.38
10.....	.00	3.12	5.58						1.67	.62	.42	.46
11.....	.00	2.25	5.75						1.75	.58	.33	.29
12.....	.08	2.21	5.21					3.00	1.88	.50	.29	.17
13.....	.12	1.96	4.62					2.88	2.25	.46	.25	.12
14.....	.08	2.33	3.88					2.71	2.62	.42	.21	.08
15.....	.12	2.92	3.54					2.54	2.46	.29	.17	
16.....	.21	6.33	5.62					2.54	2.29	.21	.17	
17.....	.29	5.50	6.33					2.50	2.17	.17	.08	
18.....	1.21	7.17	4.75					2.58	2.08	.17	.08	
19.....	1.12	5.83	4.67					2.62	1.96	.17	.08	
20.....	1.00	4.50	6.05					2.71	1.79	.08		
21.....	.67	4.00	6.67					3.05	1.62	.08		
22.....	.38	4.58	5.42					2.79	1.54	.21		
23.....	.29	4.58	4.79					2.62	1.54	.17		
24.....	.00	3.50	4.42					2.58	1.46	.08		
25.....	.00	3.05	5.21					2.50	1.38	.08		
26.....	.00	2.67	8.21					2.42	1.33	.08		.12
27.....	.00	2.29	8.21					2.33	1.25	.08		.29
28.....	.00	2.00	6.75					2.33	1.25	.08		.46
29.....	.00	1.88	5.33					2.25	1.17			.38
30.....	.00	1.67	4.79					2.12	1.17			.21
31.....	.00		5.62					2.05				
1907-8.												
1.....	.21	.21	3.88	9.42	3.12	4.33	4.17	3.21	2.54	1.96	.17	
2.....	.29	.12	3.54	8.92	3.00	6.25	4.58	3.21	2.75	1.79	.17	
3.....	.46	.33	3.21	8.50	2.71	5.42	4.79	3.46	2.92	1.71	.17	
4.....	.38	.46	3.83	8.17	3.05	5.08	4.58	3.62	2.62	1.54	.08	
5.....	.29	.29	2.42	7.08	3.42	4.58	4.12	3.29	2.46	1.38	.08	
6.....	.21	.21	2.88	6.38	3.67	4.08	4.00	3.12	2.38	1.25	.08	
7.....	.08	.12	3.12	8.00	8.88	3.67	3.71	3.00	2.21	1.25	.12	
8.....		.05	3.29	11.17	9.50	3.38	3.54	3.05	2.12	1.17	.25	
9.....			3.79	11.33	8.42	3.12	3.38	3.21	2.21	1.08	.17	
10.....			4.25	9.83	7.33	3.58	3.21	3.33	2.38	1.00	.08	
11.....			4.71	9.33	7.05	4.08	3.33	3.12	2.58	1.00		
12.....			6.12	8.75	6.71	5.12	3.54	3.05	2.79	1.00		
13.....			7.75	6.88	6.54	5.83	3.71	2.88	2.96	.96		
14.....			15.00	6.42	6.29	6.58	3.83	2.75	2.83	.83		
15.....		.12	8.50	5.67	6.08	7.12	3.92	2.96	2.46	.75		
16.....		.29	5.75	6.33	5.54	7.71	4.05	3.17	2.29	.71		
17.....		.50	4.96	7.50	5.38	8.67	4.21	3.38	2.21	.62		
18.....		.33	4.17	5.83	5.21	8.58	4.12	3.75	2.12	.54		
19.....		.42	4.21	5.54	5.33	7.83	3.71	4.21	2.05	.58		
20.....		.75	4.75	5.29	5.46	7.42	3.54	4.38	2.42	.50		
21.....		2.00	5.33	5.12	5.21	7.05	3.38	4.54	2.83	.42		
22.....		3.05	6.33	4.96	5.05	6.00	3.17	4.75	4.12	.42		
23.....		3.21	10.67	4.79	4.58	4.50	3.38	4.96	3.62	.38		
24.....		6.46	15.00	4.62	4.29	3.88	3.50	4.42	2.92	.33		
25.....		5.50	14.50	4.46	4.05	3.92	3.83	3.25	2.62	.29		
26.....		5.08	24.00	4.29	3.62	4.50	4.12	3.71	2.46	.25		
27.....		4.79	21.50	4.12	3.46	4.79	3.83	3.54	2.38	.25		
28.....		4.62	15.00	3.96	3.33	5.25	3.46	3.25	2.29	.25		
29.....		4.46	10.00	3.79	3.21	5.21	3.33	3.05	2.12	.21		
30.....		4.17	6.50	3.38		4.42	3.29	2.88	2.00	.17		
31.....	.21		8.12	3.21		3.88		2.71		.17		

Daily gage height, in feet, of Umpqua River near Elkton, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.		1.08	3.00	4.0	4.5	7.4	3.55	3.2	2.9	0.55	0.15	-0.3
2.		.92	2.00	6.5	6.5	7.1	3.7	3.05	3.1	.4	.15	
3.		.71	1.00	8.5	8.5	7.4	3.55	3.0	2.85	.45	.15	
4.		.67	1.00	10.5	11.5	8.1	3.45	3.2	2.55	.6	.15	
5.		.62	2.50	12.5	7.5	8.6	3.3	3.4	2.4	.8	.1	
6.		.38	4.50	8.5	5.5	7.5	3.3	3.55	2.2	1.1	.1	
7.		.33	7.00	13.5	5.5	6.5	3.5	3.6	2.05	1.4	.1	
8.		.33	5.67	16.0	7.5	5.1	3.3	3.4	1.85	1.1		
9.		.29	5.21	10.5	5.5	5.4	3.2	3.2	2.0	.7		
10.		.25	5.05	8.5	5.0	5.25	3.4	2.85	2.3	.55		
11.		.17	4.54	6.5	7.5	4.7	3.55	2.55	1.4	.4		
12.		.17	4.25	4.5	8.5	4.6	3.45	2.85	1.3	.45		
13.	0.12	.17	4.21	3.0	5.5	4.5	3.35	3.25	1.6	.6		
14.	.29	.25	3.46	6.0	5.5	4.4	3.25	3.6	2.4	.55		
15.	.58	.38	3.08	9.0	7.5	4.2	3.4	3.4	2.6	.4		
16.		.88	5.4	2.50	11.5	4.05	3.3	3.1	2.4	.35		
17.	1.42	.83	3.08	13.5	12.5	3.9	3.2	2.85	2.15	.3		
18.	5.00	2.50	3.42	16.0	8.5	3.6	3.1	2.45	1.9	.25		
19.	6.38	4.50	2.83	20.5	8.0	3.45	3.3	2.4	1.6	.25		
20.	6.17	6.00	2.42	26.0	11.5	3.25	3.35	2.05	1.45	.3		
21.	4.50	5.62	2.21	23.5	10.0	3.05	3.15	1.85	1.3	.2		
22.	2.00	6.08	2.00	18.0	8.1	3.4	3.1	1.55	1.05	.3		
23.	2.00	6.92	2.38	13.0	7.6	3.6	3.1	1.4	.95	.45		
24.	1.88	6.38	2.62	11.5	7.35	3.1	3.25	1.2	.7	.4		
25.	1.62	6.12	2.75	10.0	7.9	3.05	3.1	1.0	.55	.25		
26.	1.50	5.58	3.54	9.0	9.1	3.1	3.05	1.1	.7	.2		
27.	1.38	5.38	3.92	7.5	9.6	3.3	3.2	1.4	.9	.2		.1
28.	1.29	5.25	4.83	5.5	7.9	3.6	3.4	1.2	1.2	.35		.3
29.	1.58	5.21	7.00	5.0		3.6	3.45	1.65	.9	.25		.45
30.	2.00	5.05	8.83	3.5		3.35	3.3	2.1	.6	.2		.6
31.	1.29		5.00	3.0		3.1		2.55		.15		
1909-10.												
1.	.8	2.5	9.5	6.1	7.7	15.5	3.45	3.15	1.0	.7		
2.	.7	4.5	8.0	5.8	7.55	14.5	3.25	3.0	1.0	.8		
3.	.55	4.0	7.0	5.4	7.25	11.0	3.05	2.8	1.25	.9		.3
4.	.4	2.0	6.0	4.9	6.75	10.15	3.25	2.65	1.05	.8		.3
5.	.35	1.5	5.5	4.75	6.35	9.9	3.55	2.5	.9	.75		.3
6.	.25	3.0	4.5	4.9	5.2	9.65	3.75	2.8	1.05	.65		.3
7.	.15	4.0	5.5	5.4	4.15	9.4	3.95	2.65	1.25	.6		.3
8.	.1	5.1	7.5	5.65	3.85	8.65	3.6	2.75	1.1			.3
9.	.05	4.5	10.0	5.15	3.65	6.9	3.25	3.1	.9			.3
10.		3.5	12.5	4.65	3.5	6.25	3.05	3.6	.8			.3
11.		2.5	8.5	4.2	3.4	6.05	2.9	3.65	.9			.3
12.		2.0	10.0	4.0	3.35	6.7	3.05	3.25	1.0			.3
13.		1.85	8.5	3.85	4.25	5.35	3.4	3.05	.9			.3
14.		1.55	8.5	3.75	5.15	4.95	3.65	2.75	.75			.15
15.		1.4	8.0	3.35	5.4	5.0	3.25	2.6	.75			.15
16.		1.45	7.4	3.05	5.65	5.15	3.1	2.5	.75			.15
17.		1.8	6.75	2.9	5.95	5.2	3.25	2.3	.9			.15
18.	.1	2.4	6.1	2.8	6.25	4.85	3.6	2.15	.85			.15
19.	.1	3.5	5.6	2.75	8.5	4.4	3.4	2.25	.75			.5
20.	.05	11.75	5.1	2.55	9.25	4.15	3.15	2.1	.95			.5
21.	.2	11.5	4.6	2.6	8.15	4.1	3.0	2.0	1.25			.5
22.	.45	16.0	4.2	3.0	7.75	4.45	3.0	1.9	1.3			.5
23.	.6	36.5	4.05	5.0	7.55	7.4	3.15	1.75	1.25			.45
24.	.3	17.5	3.8	7.5	7.85	7.15	3.0	1.65	1.05			.35
25.	.1	13.5	3.6	7.25	11.0	6.65	2.8	1.5	1.0			.7
26.	.05	10.5	3.4	7.05	10.0	6.4	2.65	1.4	.9			.6
27.	.0	8.5	3.2	6.8	8.65	5.85	2.85	1.25	.8			.4
28.	.1	7.0	3.4	6.55	8.15	4.9	3.1	1.05	.75			.3
29.	.4	6.5	4.35	6.25		4.55	3.4	1.0	.8			.25
30.	.95	8.5	5.5	6.0		4.15	3.4	1.3	.75			.2
31.	1.4		6.5	7.65		3.65		1.15				

NOTE.—Gage heights Jan. 1 to Sept. 30, 1910, refer to datum of gage installed Sept. 3, 1910. Missing gage readings were below zero of old gage but were erroneously recorded by observer and are therefore not published.

Daily discharge, in second-feet, of Umpqua River near Elkton, Oreg., for 1905-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....		1,350	5,700	14,700	12,800	19,300	18,700	7,450	15,300	3,360	1,500	1,290
2.....		1,290	4,560	14,700	11,300	14,900	16,300	6,720	12,700	3,360	1,500	1,290
3.....		1,290	3,800	6,950	9,660	14,600	13,500	6,300	11,000	3,220	1,430	1,290
4.....		1,290	4,460	7,150	9,880	13,600	12,200	6,000	11,000	2,940	1,430	1,290
5.....		1,250	4,640	7,150	8,820	13,600	12,200	6,000	10,800	2,760	1,430	1,290
6.....		1,250	5,200	6,950	7,980	11,500	10,200	6,120	10,100	2,680	1,430	1,290
7.....		1,200	6,300	7,250	7,350	12,100	9,400	5,900	10,700	2,460	1,430	1,290
8.....		1,200	6,200	7,250	6,720	12,100	8,960	5,380	11,000	2,250	1,430	1,290
9.....		1,150	5,700	9,290	6,430	12,000	8,640	5,380	10,800	2,250	1,430	1,290
10.....		1,150	4,560	17,200	6,120	11,700	8,960	5,000	10,800	2,110	1,430	1,290
11.....		1,150	3,730	13,200	5,900	11,300	8,200	5,380	12,500	1,970	1,430	1,290
12.....		1,150	3,220	12,200	5,480	11,300	7,350	5,290	10,600	1,970	1,430	1,290
13.....		1,150	2,760	27,900	5,090	11,300	6,520	5,000	9,880	1,970	1,430	1,290
14.....		1,150	2,510	24,200	4,820	11,300	6,300	4,730	8,720	1,970	1,350	1,540
15.....		1,150	2,400	21,600	5,090	8,960	6,000	4,910	9,180	1,970	1,350	2,460
16.....		1,150	2,310	43,000	6,200	6,300	6,000	8,820	9,660	1,840	1,350	2,250
17.....		1,150	2,350	61,400	6,620	6,000	6,000	8,400	9,880	1,770	1,350	1,970
18.....	1,350	1,150	2,510	30,000	7,680	6,000	5,900	7,450	8,400	1,730	1,290	1,770
19.....	1,970	1,290	2,820	22,700	17,200	6,000	5,200	6,950	7,550	1,730	1,290	1,690
20.....	1,730	1,730	4,460	16,900	24,800	6,000	5,200	6,200	6,720	1,730	1,290	1,660
21.....	1,660	3,130	9,290	14,000	49,300	7,250	5,380	5,900	6,000	1,690	1,290	1,580
22.....	1,500	2,510	6,720	12,000	40,200	8,960	5,700	7,150	5,800	1,660	1,290	1,500
23.....	1,350	1,840	4,910	11,500	34,500	9,880	6,200	9,770	5,200	1,660	1,290	1,390
24.....	1,350	1,660	4,040	23,200	33,500	9,290	6,200	9,070	4,640	1,580	1,290	1,350
25.....	1,430	1,540	2,820	22,000	33,600	8,960	6,420	7,150	4,300	1,500	1,290	1,430
26.....	1,430	1,500	3,360	19,600	27,400	9,290	6,420	7,880	4,140	1,500	1,290	1,430
27.....	1,890	1,500	14,400	16,400	31,700	9,770	6,820	8,200	3,800	1,500	1,290	1,330
28.....	1,930	2,820	13,500	13,900	23,200	8,820	7,880	10,100	3,800	1,500	1,290	1,290
29.....	1,800	2,630	9,770	12,500	.....	8,400	8,500	40,700	3,800	1,500	1,290	1,290
30.....	1,800	3,580	8,720	9,990	.....	7,880	8,200	29,400	3,730	1,500	1,290	1,290
31.....	1,620	.....	22,000	12,600	.....	7,880	.....	22,800	.....	1,500	1,290	.....
1906-7.												
1.....	1,290	1,290	2,760	.....	.....	.....	.....	.....	3,800	2,350	1,290	1,290
2.....	1,290	1,290	2,630	.....	.....	.....	.....	.....	3,730	2,250	1,290	1,290
3.....	1,290	1,290	2,400	.....	.....	.....	.....	.....	3,580	2,150	1,290	1,290
4.....	1,290	1,290	2,250	.....	.....	.....	.....	.....	3,290	2,110	1,290	1,290
5.....	1,290	1,500	2,250	.....	.....	.....	.....	.....	3,220	2,400	1,290	1,290
6.....	1,290	1,390	2,310	.....	.....	.....	.....	.....	3,220	2,510	1,290	1,350
7.....	1,290	2,940	2,820	.....	.....	.....	.....	.....	3,220	2,310	1,390	1,430
8.....	1,290	7,880	6,200	.....	.....	.....	.....	.....	3,220	2,110	1,540	1,540
9.....	1,290	7,880	12,000	.....	.....	.....	.....	.....	3,220	2,010	1,620	1,620
10.....	1,290	6,300	13,100	.....	.....	.....	.....	.....	3,220	1,840	1,660	1,690
11.....	1,290	4,300	13,600	.....	.....	.....	.....	.....	3,360	1,800	1,580	1,540
12.....	1,350	4,220	12,000	.....	.....	.....	.....	6,000	3,580	1,730	1,540	1,430
13.....	1,390	3,730	10,200	.....	.....	.....	.....	5,700	4,300	1,690	1,500	1,390
14.....	1,350	4,460	8,200	.....	.....	.....	.....	5,290	5,090	1,660	1,470	1,350
15.....	1,390	5,800	7,350	.....	.....	.....	.....	4,910	4,730	1,540	1,430	1,290
16.....	1,470	15,500	13,200	.....	.....	.....	.....	4,910	4,380	1,470	1,430	1,290
17.....	1,540	12,800	15,500	.....	.....	.....	.....	4,820	4,140	1,430	1,350	1,290
18.....	2,510	18,200	10,600	.....	.....	.....	.....	5,000	3,960	1,430	1,350	1,290
19.....	2,400	13,900	10,400	.....	.....	.....	.....	5,090	3,730	1,430	1,350	1,290
20.....	2,250	9,880	14,600	.....	.....	.....	.....	5,290	3,420	1,350	1,290	1,290
21.....	1,890	8,500	16,500	.....	.....	.....	.....	6,120	3,130	1,350	1,290	1,290
22.....	1,620	10,100	12,600	.....	.....	.....	.....	5,480	3,000	1,470	1,290	1,290
23.....	1,540	10,100	10,700	.....	.....	.....	.....	5,090	3,000	1,430	1,290	1,290
24.....	1,290	7,250	9,660	.....	.....	.....	.....	5,000	2,880	1,350	1,290	1,290
25.....	1,290	6,120	12,000	.....	.....	.....	.....	4,820	2,760	1,350	1,290	1,290
26.....	1,290	5,200	21,800	.....	.....	.....	.....	4,640	2,680	1,350	1,290	1,390
27.....	1,290	4,380	21,800	.....	.....	.....	.....	4,460	2,570	1,350	1,290	1,540
28.....	1,290	3,800	16,800	.....	.....	.....	.....	4,460	2,570	1,350	1,290	1,690
29.....	1,290	3,580	12,300	.....	.....	.....	.....	4,300	2,460	1,290	1,290	1,620
30.....	1,290	3,220	10,700	.....	.....	.....	.....	4,040	2,460	1,290	1,290	1,470
31.....	1,290	.....	13,200	.....	.....	.....	.....	3,900	.....	1,290	1,290	.....

Daily discharge, in second-feet, of Umpqua River near Elkton, Oreg., for 1905-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.	1,470	1,470	8,200	26,200	6,300	9,400	8,960	6,520	4,910	3,730	1,430	
2.	1,540	1,390	7,350	24,300	6,000	15,200	10,100	6,520	5,380	3,420	1,430	
3.	1,690	1,580	6,520	22,800	5,290	12,600	10,700	7,150	5,800	3,290	1,430	
4.	1,620	1,690	8,080	21,600	6,120	11,500	10,100	7,550	5,090	3,000	1,350	
5.	1,540	1,540	4,640	17,900	7,050	10,100	8,820	6,720	4,730	2,760	1,350	
6.	1,470	1,470	5,700	15,600	7,680	8,720	8,500	6,300	4,560	2,570	1,350	
7.	1,350	1,390	6,300	21,000	24,200	7,680	7,750	6,000	4,220	2,570	1,390	
8.	1,290	1,330	6,720	32,800	26,500	6,950	7,350	6,120	4,040	2,460	1,500	
9.	1,290	1,290	7,980	33,500	22,500	6,300	6,950	6,520	4,220	2,350	1,430	
10.	1,290	1,290	9,180	27,800	18,700	7,450	6,520	6,820	4,560	2,250	1,350	
11.	1,290	1,290	10,500	25,900	17,800	8,720	6,820	6,300	5,000	2,250		
12.	1,290	1,290	14,800	23,700	16,700	11,700	7,350	6,120	5,480	2,250		
13.	1,290	1,290	20,200	17,200	16,100	13,900	7,750	5,700	5,900	2,200		
14.	1,290	1,290	47,800	15,700	15,300	16,300	8,080	5,380	5,580	2,050		
15.	1,290	1,390	22,800	13,400	14,700	18,000	8,300	5,900	4,730	1,970		
16.	1,290	1,540	13,600	15,500	13,000	20,000	8,640	6,420	4,380	1,930		
17.	1,290	1,730	11,200	19,300	12,500	23,400	9,070	6,950	4,220	1,840		
18.	1,290	1,580	8,960	13,900	12,000	23,100	8,820	7,880	4,040	1,770		
19.	1,290	1,660	9,070	13,000	12,300	20,400	7,750	9,070	3,900	1,800		
20.	1,290	1,970	10,600	12,200	12,700	19,000	7,350	9,540	4,640	1,730		
21.	1,290	3,800	12,300	11,700	12,000	17,800	6,950	9,990	5,580	1,660		
22.	1,290	6,120	15,500	11,200	11,500	14,400	6,420	10,600	8,820	1,660		
23.	1,290	6,520	30,900	10,700	10,100	9,880	6,950	11,200	7,550	1,620		
24.	1,290	15,900	47,800	10,200	9,290	8,200	7,250	9,660	5,800	1,580		
25.	1,290	12,800	45,800	9,770	8,640	8,300	8,080	6,620	5,090	1,540		
26.	1,290	11,500	84,600	9,290	7,550	9,880	8,820	7,780	4,730	1,500		
27.	1,290	10,700	74,400	8,820	8,820	10,700	8,080	7,350	4,560	1,500		
28.	1,290	10,200	47,800	8,400	6,820	12,100	7,150	6,620	4,380	1,500		
29.	1,290	9,770	28,400	7,980	6,520	12,000	6,820	6,120	4,040	1,470		
30.	1,290	8,960	16,000	6,950		9,660	6,720	5,700	3,800	1,430		
31.	1,470		21,400	6,520		8,200		5,290		1,430		
1908-9.												
1.		2,350	6,000	8,500	9,880	19,000	7,380	6,540	5,840	1,820	1,420	1,050
2.		2,150	3,800	16,000	16,000	17,900	7,750	6,180	6,300	1,670	1,420	1,050
3.		1,930	2,250	22,800	22,800	19,000	7,380	6,070	5,720	1,720	1,420	1,110
4.		1,890	2,250	30,300	34,100	21,400	7,140	6,540	5,060	1,880	1,420	1,120
5.		1,840	4,820	38,000	19,300	23,200	6,780	7,020	4,760	2,120	1,380	1,110
6.		1,620	9,880	22,800	12,800	19,300	6,780	7,380	4,360	2,500	1,380	1,090
7.		1,550	17,600	41,800	12,800	16,000	7,260	7,500	4,080	2,940	1,380	1,090
8.		1,580	13,400	51,800	19,300	11,600	6,780	7,020	3,710	2,500	1,380	1,090
9.		1,540	12,000	30,300	12,800	12,500	6,540	6,540	3,980	2,000	1,340	1,080
10.		1,500	11,500	22,800	11,300	12,100	7,020	5,720	4,560	1,820	1,300	1,080
11.		1,430	9,990	16,000	19,300	10,400	7,380	5,060	2,940	1,670	1,280	1,090
12.		1,430	9,180	9,880	22,800	10,200	7,140	5,720	2,790	1,720	1,260	1,110
13.	1,390	1,430	9,070	6,070	12,800	9,880	6,900	6,660	3,270	1,880	1,240	1,130
14.	1,540	1,500	7,150	14,400	12,800	9,600	6,660	7,500	4,760	1,820	1,220	1,140
15.	1,800	1,620	6,200	24,600	19,300	9,040	7,020	7,020	5,170	1,670	1,200	1,130
16.	2,110	1,770	4,820	34,100	34,100	8,640	6,780	6,300	4,760	1,620	1,180	1,120
17.	2,820	2,050	6,200	41,800	38,000	8,250	6,540	5,720	4,260	1,570	1,160	1,050
18.	11,300	4,820	7,050	51,800	22,800	7,500	6,300	4,860	3,800	1,520	1,150	1,020
19.	15,600	9,880	5,580	70,200	21,000	7,140	6,780	4,760	3,270	1,520	1,140	1,000
20.	14,900	14,400	4,640	93,000	34,100	6,660	6,900	4,080	3,020	1,570	1,130	990
21.	9,880	13,200	4,220	82,600	28,400	6,180	6,420	3,710	2,790	1,470	1,110	990
22.	3,800	14,700	3,800	60,000	21,400	7,020	6,300	3,180	2,440	1,570	1,090	1,000
23.	3,800	17,300	4,560	39,900	19,600	7,500	6,300	2,940	2,300	1,720	1,080	1,040
24.	3,580	15,600	5,090	34,100	18,800	6,300	6,660	2,640	2,000	1,670	1,070	1,140
25.	3,130	14,800	5,380	28,400	20,700	6,180	6,300	2,370	1,820	1,520	1,050	1,280
26.	2,940	13,100	7,350	24,600	25,000	6,300	6,180	2,500	2,000	1,470	1,050	1,320
27.	2,760	12,500	8,300	19,300	26,900	6,780	6,540	2,940	2,240	1,470	1,050	1,380
28.	2,630	12,100	10,800	12,800	20,700	7,500	7,020	2,640	2,640	1,620	1,050	1,570
29.	3,070	12,000	17,600	11,300		7,500	7,140	3,360	2,240	1,520	1,050	1,720
30.	3,800	11,500	24,000	7,260		6,900	6,780	4,170	1,880	1,470	1,050	1,880
31.	2,630		11,300	6,070		6,300		5,060		1,420	1,050	

Daily discharge, in second-feet, of Umpqua River near Elkton, Oreg., for 1905-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2,120	4,960	26,500	13,200	18,300	47,800	5,960	5,270	1,730	1,420	1,200	1,080
2.....	2,000	9,880	21,000	12,200	17,800	43,800	5,500	4,940	1,730	1,520	1,200	1,080
3.....	1,820	8,500	17,600	11,000	16,800	30,300	5,050	4,520	2,020	1,620	1,200	1,080
4.....	1,670	3,980	14,400	9,600	15,200	27,100	5,500	4,220	1,780	1,520	1,150	1,080
5.....	1,620	3,100	12,800	9,180	13,900	26,100	6,180	3,940	1,620	1,470	1,150	1,080
6.....	1,520	6,070	9,880	9,600	10,400	25,200	6,560	4,520	1,780	1,380	1,150	1,080
7.....	1,420	8,500	12,800	11,000	7,620	24,200	7,040	4,220	2,020	1,330	1,150	1,080
8.....	1,380	11,600	19,300	11,800	6,800	21,500	6,200	4,420	1,840	1,300	1,150	1,080
9.....	1,310	9,880	28,400	10,300	6,320	15,700	5,500	5,160	1,620	1,300	1,150	1,080
10.....	1,310	7,260	38,000	8,900	6,070	13,600	5,050	6,200	1,520	1,300	1,150	1,080
11.....	1,280	4,960	22,800	7,750	5,840	13,000	4,730	6,320	1,620	1,300	1,150	1,080
12.....	1,250	3,980	28,400	7,260	5,720	15,000	5,050	5,500	1,730	1,300	1,150	1,080
13.....	1,220	3,710	22,800	6,800	7,880	10,900	5,840	5,050	1,620	1,250	1,150	1,080
14.....	1,210	3,180	22,800	6,560	10,300	9,740	6,320	4,420	1,470	1,250	1,150	960
15.....	1,200	2,940	21,000	5,720	11,000	9,880	5,500	4,130	1,470	1,250	1,150	960
16.....	1,200	3,020	19,000	5,050	11,800	10,300	5,160	3,940	1,470	1,250	1,150	960
17.....	1,210	3,620	16,800	4,730	12,700	10,400	5,500	3,580	1,620	1,250	1,100	960
18.....	1,380	4,760	14,700	4,520	13,600	9,460	6,200	3,320	1,570	1,250	1,100	960
19.....	1,380	7,260	13,200	4,420	21,000	8,250	5,840	3,500	1,470	1,250	1,100	1,240
20.....	1,340	35,000	11,600	4,040	23,700	7,620	5,270	3,240	1,680	1,250	1,100	1,240
21.....	1,470	34,100	10,200	4,130	19,800	7,500	4,940	3,070	2,020	1,250	1,100	1,240
22.....	1,720	51,800	9,040	4,940	18,400	8,380	4,940	2,910	2,080	1,250	1,100	1,240
23.....	1,880	138,000	8,640	9,880	17,800	17,300	5,270	2,680	2,020	1,200	1,100	1,200
24.....	1,570	58,000	8,000	17,600	18,800	16,500	4,940	2,540	1,780	1,200	1,100	1,120
25.....	1,380	41,800	7,500	16,800	30,300	14,900	4,520	2,340	1,730	1,200	1,100	1,420
26.....	1,340	30,300	7,020	16,200	26,500	14,100	4,220	2,210	1,620	1,200	1,100	1,330
27.....	1,290	22,800	6,540	15,400	21,500	12,400	4,620	2,020	1,520	1,200	1,080	1,160
28.....	1,380	17,600	7,020	14,600	19,800	9,600	5,160	1,780	1,470	1,200	1,080	1,080
29.....	1,670	16,000	9,460	13,600	.....	8,640	5,840	1,730	1,520	1,200	1,080	1,040
30.....	2,300	22,800	12,800	12,800	.....	7,620	5,840	2,080	1,470	1,200	1,080	1,000
31.....	2,940	.....	16,000	18,100	.....	6,320	.....	1,900	.....	1,200	1,080	.....

NOTE.—Daily discharge determined as follows:

1905 to 1908. From rating curves well defined between 1,200 and 10,000 second-feet, and fairly well defined to 20,000 second-feet. Discharge estimated Nov. 3-18 and Dec. 17, 1905. Discharges in August, September, and October, 1906, and July to October, 1907, probably somewhat large as water was below the zero of the gage and the observer reported the reading as zero.

1909. From curve well defined between 1,100 and 10,000 second-feet. Discharge Aug. 8-31, Sept. 2-26, and Oct. 10-17, estimated from comparison of hydrographs for other stations in Umpqua River basin.

1910. From curve well defined between 900 and 10,000 second-feet. Discharge July 8 to Sept. 2, estimated from comparison of hydrographs for discharge of North Umpqua River at Winchester.

Measurements made in 1912 indicate that the high-water extension of the curves may be somewhat too large.

Monthly discharge of Umpqua River near Elkton, Oreg., for 1905-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October 18-31.....	1,970	1,350	1,630	45,300	C.
November.....	3,580	1,150	1,580	94,000	C.
December.....	22,000	2,310	5,800	357,000	B.
January.....	61,400	6,950	17,400	1,070,000	B.
February.....	49,300	4,820	16,000	889,000	B.
March.....	19,300	6,000	10,200	627,000	B.
April.....	18,700	5,200	8,310	494,000	B.
May.....	40,700	4,730	9,080	558,000	B.
June.....	15,300	3,730	8,420	501,000	B.
July.....	3,360	1,500	2,040	125,000	C.
August.....	1,500	1,200	1,360	83,600	C.
September.....	2,460	1,200	1,470	87,500	C.
The period.....	.....	.....	.....	4,930,000	.....

Monthly discharge of Umpqua River near Elkton, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1906-7.					
October.....	2,510	1,290	1,460	89,800	D.
November.....	18,200	1,290	6,270	373,000	C.
December.....	21,800	2,250	10,400	640,000	B.
May 12-31.....	6,120	3,900	4,970	197,000	B.
June.....	5,090	2,460	3,400	202,000	C.
July.....	2,510	1,290	1,690	104,000	D.
August.....	1,600	1,290	1,370	84,200	D.
September.....	1,690	1,290	1,390	82,700	C.
1907-8.					
October.....	1,690	1,290	1,350	83,000	C.
November.....	15,900	1,290	4,190	249,000	B.
December.....	84,600	4,640	21,500	1,320,000	C.
January.....	33,500	6,520	16,600	1,020,000	B.
February.....	26,500	5,290	12,200	702,000	B.
March.....	23,400	6,300	12,600	775,000	B.
April.....	10,700	6,420	7,970	474,000	B.
May.....	11,200	5,290	7,170	441,000	B.
June.....	8,820	3,800	4,990	297,000	B.
July.....	3,730	1,430	2,100	129,000	D.
August 1-10.....	1,500	1,350	1,400	27,800	D.
The period.....				5,520,000	
1908-9.					
October 13-31.....	15,600	1,390	4,880	184,000	C.
November.....	17,300	1,430	6,500	387,000	B.
December.....	24,000	2,250	8,250	507,000	B.
January.....	93,000	6,070	31,400	1,930,000	C.
February.....	38,000	9,880	21,100	1,170,000	B.
March.....	23,200	6,180	10,800	664,000	B.
April.....	7,750	6,180	6,830	406,000	B.
May.....	7,500	2,370	5,150	317,000	B.
June.....	6,300	1,820	3,630	216,000	B.
July.....	2,940	1,420	1,760	108,000	B.
August.....	1,420	1,050	1,210	74,400	C.
September.....	1,880	990	1,170	69,600	C.
The period.....				9,440,000	
1909-10.					
October.....	2,940	1,200	1,540	94,700	C.
November.....	138,000	2,940	19,300	1,150,000	B.
December.....	38,000	6,540	16,000	984,000	B.
January.....	18,100	4,040	9,930	611,000	B.
February.....	30,300	5,720	14,800	822,000	B.
March.....	47,800	6,320	16,200	996,000	B.
April.....	7,040	4,220	5,470	325,000	B.
May.....	6,320	1,730	3,730	229,000	B.
June.....	2,080	1,470	1,690	101,000	B.
July.....	1,620	1,200	1,290	79,300	C.
August.....	1,200	1,080	1,130	69,500	C.
September.....	1,420	960	1,100	65,500	A.
The year.....	138,000	960	7,680	5,530,000	

NORTH UMPQUA RIVER NEAR OAKCREEK, OREG.

Location.—In the NW. $\frac{1}{4}$, sec. 25, T. 26 S., R. 5 W., 1 mile above J. R. Dixon's farm-house, 3 miles west of Oakcreek, about 10 miles below mouth of East Fork of North Umpqua.

Records presented.—September 6, 1905, to October 10, 1908.

Drainage area.—1,000 square miles.

Gage.—Staff gage, lower portion inclined, upper portion vertical.

Channel.—Rock and gravel; shifts somewhat.

Discharge measurements.—Made from cable.

Accuracy.—Estimates good.

Discharge measurements of North Fork of Umpqua River near Oakcreek, Oreg., in 1905-1906.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Fect.</i>	<i>Sec.-ft.</i>	1906.		<i>Fect.</i>	<i>Sec.-ft.</i>
Sept. 6	L. R. Allen.....	1.35	886	Mar. 20	L. R. Allen.....	3.23	2,780
Oct. 19	.....do.....	2.10	1,420	May 1	.....do.....	4.06	4,340
Dec. 27	.....do.....	5.35	7,110	.....do.....	.....do.....	6.74	10,200
				.....do.....	.....do.....	2.23	1,600
1906.				July 14	.....do.....	1.73	1,120
Jan. 31	L. R. Allen.....	5.56	7,370	Aug. 10	.....do.....	2.30	1,610
				Sept. 13	I. E. Oakes.....		

Daily gage height, in feet, of North Umpqua River near Oakcreek, Oreg., for 1905-1908.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
1.....		11.....	1.3	21.....	1.35
2.....		12.....	1.3	22.....	1.35
3.....		13.....	1.3	23.....	1.35
4.....		14.....	1.3	24.....	1.3
5.....		15.....	1.3	25.....	1.35
6.....	1.35	16.....	1.3	26.....	1.4
7.....	1.35	17.....	1.3	27.....	1.5
8.....	1.35	18.....	1.3	28.....	1.65
9.....	1.3	19.....	1.35	29.....	1.6
10.....	1.35	20.....	1.35	30.....	1.5
				31.....	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1.6	1.6	2.6	3.6	5.2	5.3	5.5	4.05	5.0	2.9	1.8	1.5
2.....	1.5	1.6	3.3	3.2	5.0	4.75	5.5	3.9	4.7	2.8	1.8	1.5
3.....	1.4	1.55	3.55	3.1	4.7	4.6	5.1	3.9	4.5	2.8	1.8	1.5
4.....	1.4	1.5	3.7	3.4	4.3	4.4	4.6	3.95	4.45	2.6	1.8	1.5
5.....	1.4	1.5	3.3	3.7	4.15	4.3	4.4	3.8	4.3	2.6	1.8	1.5
6.....	1.8	1.45	3.1	3.7	4.1	4.2	4.2	3.7	4.5	2.6	1.8	1.5
7.....	2.3	1.45	3.55	3.7	4.1	4.9	4.0	3.65	4.95	2.5	1.75	1.5
8.....	2.85	1.45	3.9	3.8	4.1	5.0	3.8	3.6	5.2	2.45	1.75	1.6
9.....	2.1	1.45	3.1	7.3	3.7	5.0	4.4	3.65	5.5	2.4	1.7	1.7
10.....	1.75	1.4	3.75	5.2	3.6	4.75	4.4	3.75	5.05	2.35	1.7	1.6
11.....	1.65	1.4	2.6	5.4	3.5	4.3	3.85	3.7	5.5	2.35	1.7	1.5
12.....	1.55	1.4	2.55	5.55	3.4	4.15	3.65	3.55	4.5	2.3	1.7	1.65
13.....	1.5	1.4	2.5	6.2	3.3	3.7	3.55	3.5	4.5	2.25	1.7	2.4
14.....	1.45	1.4	2.4	6.1	3.3	3.5	3.55	3.5	4.3	2.2	1.65	2.3
15.....	1.65	1.4	2.35	5.4	3.7	3.25	3.65	4.1	4.4	2.2	1.65	2.5
16.....	2.5	1.35	2.3	12.5	3.6	3.25	3.7	4.0	4.3	2.25	1.65	1.95
17.....	2.0	1.45	2.6	7.0	3.85	3.0	3.6	3.8	4.5	2.15	1.65	1.75
18.....	2.2	1.75	2.4	6.7	4.6	3.15	3.5	3.6	4.1	2.1	1.6	1.65
19.....	2.1	1.9	2.6	6.3	6.75	3.1	3.5	3.55	3.95	2.1	1.6	1.5
20.....	1.8	2.8	2.7	4.3	7.3	4.8	3.75	3.95	3.8	2.05	1.6	1.55
21.....	1.65	2.2	3.1	4.0	7.5	4.4	3.9	4.5	3.6	1.9	1.6	1.55
22.....	1.7	1.95	2.8	8.95	6.95	4.15	3.95	4.9	3.3	2.0	1.6	1.55
23.....	1.65	1.8	2.5	5.6	6.55	3.8	3.95	4.6	3.0	1.95	1.6	1.6
24.....	1.6	1.75	2.4	7.4	6.95	4.3	3.7	4.8	3.3	1.95	1.55	1.8
25.....	1.75	1.65	2.35	6.7	6.4	4.2	3.85	4.0	3.2	1.95	1.55	1.6
26.....	2.75	1.8	6.25	6.06	6.4	4.2	4.05	4.0	3.1	1.9	1.55	1.6
27.....	2.3	2.7	5.35	5.4	7.25	4.1	4.2	5.8	3.1	1.9	1.5	1.55
28.....	2.0	2.2	4.35	5.1	7.0	3.9	4.45	7.5	3.05	1.9	1.5	1.55
29.....	1.8	2.2	3.6	4.7	-----	3.7	4.3	7.9	3.0	1.9	1.5	1.5
30.....	1.7	2.7	4.5	5.2	-----	3.9	4.2	6.75	2.9	1.9	1.5	1.5
31.....	1.6	-----	4.3	5.2	-----	5.9	-----	5.6	-----	1.85	1.5	-----

Daily gage height, in feet, of North Umpqua River near Oakcreek, Oreg., for 1905-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1.5	1.5	2.4	4.7	10.1	4.65	4.6	3.6	3.3	2.55	1.95	1.8
2.....	1.5	1.55	2.35	4.3	14.5	4.7	4.4	3.5	3.3	2.5	1.9	1.8
3.....	1.55	1.6	2.3	8.45	19.0	4.6	4.2	3.4	3.2	2.45	1.9	1.75
4.....	1.6	1.8	2.3	11.5	21.2	4.3	4.85	3.45	3.15	2.45	1.9	1.75
5.....	1.55	2.8	2.45	7.4	16.3	4.5	11.0	3.45	3.1	2.45	1.9	1.7
6.....	1.5	2.25	2.5	6.0	12.2	4.0	13.4	3.45	3.0	2.4	1.9	1.7
7.....	1.5	6.25	4.5	5.15	9.0	4.0	13.4	3.45	3.0	2.35	2.0	1.7
8.....	1.45	4.35	4.55	4.55	7.55	3.95	8.7	3.45	3.0	2.35	2.1	1.7
9.....	1.45	3.75	4.7	4.1	6.4	3.9	7.8	3.5	2.95	2.3	2.05	1.7
10.....	1.45	3.3	4.4	4.0	6.2	3.9	7.8	3.7	3.0	2.3	2.05	1.7
11.....	1.5	3.3	4.2	3.85	5.9	3.85	7.1	3.8	3.2	2.25	2.0	1.7
12.....	1.8	2.8	4.2	3.8	5.6	3.8	7.0	3.7	3.4	2.2	1.9	1.75
13.....	1.7	3.8	3.7	3.75	5.2	3.7	7.5	3.5	3.4	2.2	1.9	1.75
14.....	1.75	4.1	3.55	3.5	5.0	3.5	6.0	3.45	3.0	2.15	1.85	1.75
15.....	1.65	7.75	4.35	3.3	4.85	3.5	6.65	3.4	2.4	2.15	1.85	1.95
16.....	2.1	5.75	6.15	3.3	4.7	3.5	5.5	3.5	2.4	2.15	1.8	2.1
17.....	3.0	7.1	5.0	3.2	4.65	3.9	4.9	3.6	2.2	2.1	1.8	2.0
18.....	2.9	6.1	4.4	3.15	4.6	9.4	4.85	3.7	3.0	2.1	1.8	1.8
19.....	2.9	4.6	4.4	3.1	4.55	8.3	4.65	3.8	3.1	2.1	1.8	1.7
20.....	2.9	4.1	6.15	3.1	4.5	9.1	4.5	3.7	2.9	2.05	1.8	1.7
21.....	1.85	4.9	6.9	3.1	4.45	7.9	4.5	3.0	2.8	2.05	1.75	1.7
22.....	1.85	4.4	5.7	3.1	4.35	7.4	4.6	3.5	.....	2.0	1.75	1.65
23.....	1.85	3.95	4.95	3.1	4.2	7.0	4.6	3.45	.....	2.0	1.75	1.65
24.....	1.7	3.6	5.2	3.1	4.3	5.3	4.4	3.4	.....	2.0	1.8	1.65
25.....	1.65	3.3	6.85	4.1	4.45	5.0	4.3	3.4	.....	2.0	1.95	1.65
26.....	1.6	3.0	7.4	5.6	4.7	4.8	4.1	3.4	.....	2.0	1.9	1.7
27.....	1.75	2.8	5.9	6.2	4.55	4.4	4.0	3.45	.....	2.0	1.8	1.75
28.....	1.65	2.7	5.0	7.4	4.3	4.2	3.8	3.4	.....	2.0	1.75	1.8
29.....	1.6	2.6	4.9	10.75	.....	4.8	3.7	3.4	.....	2.0	1.75	1.8
30.....	1.65	2.5	4.8	8.7	.....	4.9	3.05	3.45	.....	1.95	1.75	1.8
31.....	1.6	.....	4.8	9.3	.....	5.0	.....	3.3	.....	1.95	1.8	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.
1907-8.													
1.....	1.9	1.7	3.35	5.6	3.5	4.5	4.3	3.8	3.5	3.0	2.6	1.8	1.2
2.....	1.9	2.4	3.3	5.5	3.5	3.8	4.0	3.6	3.6	3.0	2.4	1.8	1.2
3.....	1.8	2.0	3.25	5.3	3.4	3.3	4.0	3.6	3.6	3.0	2.4	1.7	1.2
4.....	1.8	1.95	3.2	5.3	3.35	3.3	4.8	3.6	3.6	2.9	2.3	1.7	1.2
5.....	1.7	1.8	3.1	5.3	3.3	3.3	4.8	3.4	3.6	2.9	2.3	1.8	1.2
6.....	1.7	1.7	3.0	5.3	4.6	3.3	4.7	3.3	3.6	2.9	2.0	1.8	1.2
7.....	1.7	1.7	2.95	5.3	5.3	3.3	5.0	4.0	3.6	2.9	2.0	1.7	1.3
8.....	1.7	1.7	2.95	6.0	5.0	3.3	3.2	4.2	3.5	2.8	2.0	1.7	1.3
9.....	1.65	1.7	2.95	6.4	4.7	3.2	3.2	4.2	3.5	2.8	2.2	1.7	1.2
10.....	1.65	1.7	3.1	7.6	4.5	3.15	3.4	4.1	3.0	2.8	2.1	1.6	1.2
11.....	1.65	1.7	3.6	7.0	4.45	3.15	3.4	4.3	3.0	2.7	2.0	1.6	.....
12.....	1.6	1.7	4.8	6.7	4.35	3.2	3.7	4.2	3.0	2.7	2.0	1.6	.....
13.....	1.6	2.1	10.0	6.6	4.2	3.3	3.7	4.2	3.0	2.7	2.0	1.6	.....
14.....	1.6	2.0	6.3	6.5	4.1	3.3	3.8	4.2	3.0	2.7	2.0	1.6	.....
15.....	1.6	1.95	5.0	5.9	4.0	4.0	3.9	5.0	3.1	2.7	2.0	1.5	.....
16.....	1.6	1.85	5.6	5.3	3.9	4.6	3.9	5.1	3.1	2.5	2.2	1.5	.....
17.....	1.6	1.85	6.6	4.9	3.75	4.5	3.8	4.0	3.1	2.5	2.2	1.5	.....
18.....	1.6	1.85	5.5	4.5	3.7	4.0	3.8	4.1	3.0	2.5	2.1	1.5	.....
19.....	1.6	1.75	4.7	5.5	3.6	3.8	3.8	4.3	3.0	2.7	2.1	1.5	.....
20.....	1.6	2.0	4.7	6.1	3.5	3.6	4.0	4.6	3.4	2.9	2.0	1.5	.....
21.....	1.6	3.3	5.9	5.3	3.5	3.55	4.2	5.0	3.5	2.8	2.0	1.4	.....
22.....	1.6	3.5	17.7	4.5	3.4	3.4	4.3	4.8	3.9	2.8	2.0	1.4	.....
23.....	1.6	5.0	9.7	4.5	3.4	3.4	4.3	4.5	4.0	2.7	2.1	1.5	.....
24.....	1.6	7.6	16.2	4.5	3.4	3.3	4.3	4.2	3.5	2.7	2.1	1.5	.....
25.....	1.6	6.5	16.0	4.5	3.4	3.3	4.5	4.0	3.5	2.7	2.1	1.4	.....
26.....	1.6	5.8	16.5	4.0	3.4	3.3	4.5	3.3	3.3	2.5	2.0	1.4	.....
27.....	1.6	5.0	10.1	3.6	3.4	3.6	4.7	3.6	3.3	2.5	2.0	1.3	.....
28.....	1.6	4.5	8.5	3.5	3.3	4.05	4.7	3.6	.....	2.5	2.0	1.3	.....
29.....	2.0	3.7	6.7	3.5	5.0	4.5	4.8	3.5	.....	2.6	2.0	1.2	.....
30.....	1.9	3.35	5.8	3.5	.....	4.3	3.6	3.5	.....	2.5	1.7	1.2	.....
31.....	1.7	.....	6.0	3.5	.....	4.15	.....	3.5	.....	2.5	1.7	.....	.....

Daily discharge, in second-feet, of North Umpqua River near Oakcreek, Oreg., for 1905-1908.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
1.....		11.....	860	21.....	890
2.....		12.....	860	22.....	890
3.....		13.....	860	23.....	890
4.....		14.....	860	24.....	860
5.....		15.....	860	25.....	890
6.....	860	16.....	860	26.....	920
7.....	890	17.....	860	27.....	985
8.....	890	18.....	860	28.....	1,090
9.....	860	19.....	890	29.....	1,060
10.....	890	20.....	890	30.....	985
				31.....	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1,060	1,060	1,980	3,410	6,590	6,810	7,270	4,220	6,150	2,360	1,200	935
2.....	985	1,060	2,930	2,780	6,150	5,610	7,220	3,940	5,510	2,230	1,200	985
3.....	920	1,020	3,320	2,640	5,510	5,300	6,370	3,940	5,100	2,230	1,200	985
4.....	920	985	3,580	3,080	4,700	4,900	5,300	4,030	5,000	1,980	1,200	985
5.....	920	985	2,930	3,580	4,410	4,700	4,900	3,700	4,700	1,980	1,200	985
6.....	1,200	952	2,640	3,580	4,320	4,510	3,580	3,580	5,100	1,980	1,200	985
7.....	1,650	952	3,320	3,580	4,320	5,930	4,130	3,490	6,040	1,860	1,170	985
8.....	2,300	952	3,940	3,760	4,320	6,150	3,760	3,410	6,590	1,860	1,170	1,050
9.....	1,460	952	2,640	11,600	3,580	6,150	4,900	3,490	7,270	1,750	1,130	1,130
10.....	1,170	920	3,670	6,590	3,410	5,610	4,900	3,670	6,260	1,700	1,130	1,060
11.....	1,090	920	1,980	7,040	3,240	4,700	3,850	3,580	7,270	1,700	1,130	985
12.....	1,020	920	1,920	7,380	3,080	4,410	3,490	3,320	5,100	1,650	1,130	1,090
13.....	985	920	1,860	8,900	2,930	3,580	3,320	3,240	5,100	1,600	1,130	1,750
14.....	952	920	1,750	8,660	2,930	3,240	3,320	3,240	4,700	1,550	1,090	1,650
15.....	1,090	920	1,700	7,040	3,580	2,850	3,490	4,320	4,900	1,550	1,090	1,860
16.....	1,860	890	1,650	26,800	3,410	2,850	3,580	4,130	4,700	1,600	1,090	1,330
17.....	1,370	952	1,980	10,800	3,850	2,500	3,410	3,760	5,100	1,500	1,090	1,170
18.....	1,550	1,170	1,750	10,100	5,300	2,710	3,240	3,410	4,320	1,460	1,050	1,090
19.....	1,460	1,280	1,980	9,140	10,200	2,640	3,240	3,320	4,030	1,460	1,050	985
20.....	1,200	2,230	2,100	4,700	11,600	5,720	3,670	4,030	3,760	1,410	1,050	1,020
21.....	1,090	1,550	2,640	4,130	12,100	4,900	3,940	5,100	3,410	1,280	1,050	1,020
22.....	1,130	1,330	2,230	16,200	10,700	4,410	4,030	5,930	2,930	1,370	1,050	1,020
23.....	1,090	1,200	1,860	7,500	9,740	3,760	4,030	5,300	2,500	1,330	1,050	1,060
24.....	1,060	1,170	1,750	11,900	10,700	4,700	3,580	5,720	2,930	1,330	1,020	1,200
25.....	1,170	1,090	1,700	10,100	9,380	4,510	3,850	4,130	2,780	1,330	1,020	1,060
26.....	2,160	1,200	9,020	8,560	9,380	4,510	4,220	4,130	2,640	1,280	1,020	1,060
27.....	1,650	2,100	6,920	7,040	11,500	4,320	4,510	7,960	2,640	1,280	985	1,020
28.....	1,370	1,550	4,800	6,370	10,800	3,940	5,000	12,100	2,570	1,280	985	1,020
29.....	1,200	1,550	3,410	5,510	.....	3,580	4,700	13,200	2,500	1,280	985	985
30.....	1,130	2,100	5,100	6,590	.....	3,940	4,510	10,200	2,360	1,280	985	985
31.....	1,060	.....	4,700	6,590	.....	8,190	.....	7,500	.....	1,240	985	.....

Daily discharge, in second-feet, of North Umpqua River near Oakcreek, Oreg., for 1905-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	985	985	1,750	5,510	19,600	5,400	5,300	3,410	2,930	1,920	1,330	1,200
2.....	985	1,020	1,700	4,700	34,000	5,510	4,900	3,240	2,930	1,860	1,280	1,200
3.....	1,020	1,060	1,650	14,700	50,300	5,300	4,510	3,080	2,780	1,800	1,280	1,170
4.....	1,060	1,200	1,650	23,900	58,600	4,700	5,820	3,160	2,710	1,800	1,280	1,170
5.....	1,020	2,230	1,800	11,900	40,400	5,100	22,300	3,160	2,640	1,800	1,280	1,130
6.....	985	1,600	1,860	8,420	26,200	4,130	30,200	3,160	2,500	1,750	1,280	1,130
7.....	985	9,020	5,100	6,480	16,300	4,130	30,200	3,160	2,500	1,700	1,370	1,130
8.....	952	4,800	5,200	5,200	12,300	4,040	15,400	3,160	2,500	1,700	1,460	1,130
9.....	952	3,670	5,510	4,320	9,380	3,940	12,900	3,240	2,430	1,650	1,420	1,130
10.....	952	2,930	4,900	4,130	8,900	3,940	12,900	3,580	2,500	1,650	1,420	1,130
11.....	985	2,930	4,510	3,850	8,190	3,850	11,100	3,760	2,780	1,600	1,370	1,130
12.....	1,200	2,230	4,510	3,760	7,500	3,760	10,800	3,580	3,080	1,550	1,280	1,170
13.....	1,130	3,760	3,580	3,670	6,590	3,580	12,100	3,240	3,080	1,550	1,280	1,170
14.....	1,170	4,320	3,320	3,240	6,150	3,240	8,420	3,160	2,500	1,500	1,240	1,170
15.....	1,090	12,800	4,800	2,930	5,820	3,240	9,980	3,080	1,750	1,500	1,240	1,330
16.....	1,460	7,840	8,780	2,930	5,510	3,240	7,270	3,240	1,750	1,500	1,200	1,460
17.....	2,500	11,100	6,150	2,780	5,400	3,940	5,930	3,410	1,550	1,460	1,200	1,370
18.....	2,360	8,660	4,900	2,710	5,300	17,500	5,820	3,580	2,500	1,460	1,200	1,200
19.....	2,360	5,300	4,900	2,640	5,200	14,300	5,430	3,760	2,640	1,460	1,200	1,130
20.....	2,360	4,320	8,780	2,640	5,100	16,600	5,100	3,580	2,360	1,420	1,200	1,130
21.....	1,240	5,930	10,600	2,640	5,000	13,200	5,100	2,500	2,230	1,420	1,170	1,130
22.....	1,240	4,900	7,730	2,640	4,800	11,900	5,300	3,240	2,200	1,370	1,170	1,090
23.....	1,240	4,040	6,040	2,640	4,510	10,800	5,300	3,160	2,170	1,370	1,170	1,090
24.....	1,130	3,410	6,590	2,640	4,700	6,810	4,900	3,080	2,140	1,370	1,200	1,090
25.....	1,090	2,930	10,500	4,320	5,000	6,150	4,700	3,080	2,110	1,370	1,330	1,090
26.....	1,060	2,500	11,900	7,500	5,510	5,720	4,320	3,080	2,080	1,370	1,280	1,130
27.....	1,170	2,230	8,190	8,900	5,200	4,900	4,130	3,160	2,040	1,370	1,200	1,170
28.....	1,090	2,100	6,150	11,900	4,700	4,510	3,760	3,080	2,010	1,370	1,170	1,200
29.....	1,060	1,980	5,930	21,600	-----	5,720	3,580	3,080	1,980	1,370	1,170	1,200
30.....	1,090	1,800	5,720	15,400	-----	5,930	2,570	3,160	1,950	1,330	1,170	1,200
31.....	1,060	-----	5,720	17,200	-----	6,150	-----	2,930	-----	1,330	1,200	-----
1907-8.												
1.....	1,280	1,130	3,000	7,500	3,240	5,100	4,700	3,760	3,240	2,500	1,980	1,200
2.....	1,280	1,750	2,930	7,270	3,240	3,760	4,130	3,410	3,410	2,500	1,750	1,200
3.....	1,260	1,370	2,860	6,810	3,080	2,930	4,130	3,410	3,410	2,500	1,750	1,130
4.....	1,200	1,330	2,780	6,810	3,000	2,930	4,720	3,410	3,410	2,360	1,650	1,130
5.....	1,130	1,200	2,640	6,810	2,930	2,930	5,720	3,080	3,410	2,360	1,650	1,200
6.....	1,130	1,130	2,500	6,810	5,300	2,930	5,510	2,930	3,410	2,360	1,370	1,200
7.....	1,130	1,130	2,430	6,810	6,810	2,930	6,150	4,130	3,410	2,360	1,370	1,130
8.....	1,130	1,130	2,430	8,420	6,150	2,930	2,780	4,510	3,240	2,230	1,370	1,130
9.....	1,090	1,130	2,430	9,380	5,510	2,780	2,780	4,510	3,240	2,230	1,550	1,130
10.....	1,090	1,130	2,640	12,400	5,100	2,710	3,080	4,320	2,500	2,230	1,460	1,060
11.....	1,090	1,130	3,410	10,800	5,000	2,710	3,080	4,700	2,500	2,100	1,370	1,060
12.....	1,060	1,130	5,720	10,160	4,800	2,780	3,580	4,510	2,500	2,100	1,370	1,060
13.....	1,060	1,460	19,300	9,860	4,510	2,930	3,580	4,510	2,500	2,100	1,370	1,060
14.....	1,060	1,370	9,140	9,620	4,320	2,930	3,760	4,510	2,500	2,100	1,370	1,060
15.....	1,060	1,330	6,150	8,190	4,130	4,130	3,940	6,150	2,640	2,100	1,370	985
16.....	1,060	1,240	7,500	6,810	3,940	5,300	3,940	6,370	2,640	1,860	1,550	985
17.....	1,060	1,240	9,860	5,930	3,670	5,100	3,760	4,130	2,640	1,860	1,550	985
18.....	1,000	1,240	7,270	5,100	3,580	4,130	3,760	4,320	2,500	1,860	1,400	985
19.....	1,050	1,170	5,510	7,270	3,410	3,700	3,760	4,700	2,500	2,100	1,460	985
20.....	1,000	1,170	5,510	8,660	3,240	3,410	4,130	5,300	3,080	2,360	1,370	985
21.....	1,060	2,930	8,190	6,810	3,240	3,320	4,510	6,150	3,240	2,230	1,370	920
22.....	1,660	3,240	45,500	5,100	3,680	3,080	4,700	5,720	3,940	2,230	1,370	920
23.....	1,060	6,150	18,400	5,100	3,080	3,080	4,700	5,100	4,130	2,100	1,460	985
24.....	1,060	12,400	40,000	5,100	3,080	2,930	4,700	4,510	3,240	2,100	1,460	985
25.....	1,060	9,620	39,300	5,100	3,080	2,930	5,100	4,130	3,240	2,100	1,460	920
26.....	1,060	7,960	41,100	4,130	3,080	2,930	5,100	2,930	2,930	1,860	1,370	920
27.....	1,060	6,150	19,600	3,410	3,080	3,410	5,510	3,410	2,930	1,860	1,370	860
28.....	1,060	5,100	14,900	3,240	2,930	4,220	5,510	3,410	2,930	1,860	1,370	860
29.....	1,370	3,580	10,100	3,240	6,150	5,100	5,720	3,240	2,720	1,980	1,370	800
30.....	1,280	3,000	7,960	3,240	-----	4,700	3,410	3,240	2,610	1,860	1,130	800
31.....	1,130	-----	8,420	3,240	-----	4,420	-----	3,240	-----	1,860	1,130	-----

Daily discharge, in second-feet, of North Umpqua River near Oakcreek, Oreg., for 1905-1908—Continued.

Day.	Oct.	Day.	Oct.	Day.	Oct.
1908.		1908.		1908.	
1.....	800	11.....	800	21.....	
2.....	800	12.....		22.....	
3.....	800	13.....		23.....	
4.....	800	14.....		24.....	
5.....	800	15.....		25.....	
6.....	800	16.....		26.....	
7.....	860	17.....		27.....	
8.....	860	18.....		28.....	
9.....	800	19.....		29.....	
10.....	800	20.....		30.....	
				31.....	

NOTE.—Discharge determined from rating curve well defined between 800 and 12,000 second-feet.

Monthly discharge of North Umpqua River near Oakcreek, Oreg., for 1905-1908.

[Drainage area, 1,000 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accu- racy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
September 6-30.....	1,090	860	902	0.902	0.84	44,700	A.
1905-6.							
October.....	2,300	920	1,270	1.27	1.46	78,100	A.
November.....	2,230	890	1,190	1.19	1.33	70,800	A.
December.....	9,020	1,650	3,020	3.02	3.48	186,000	A.
January.....	26,800	2,640	7,600	7.60	8.76	467,000	A.
February.....	12,100	2,930	6,490	6.49	6.76	300,000	A.
March.....	8,190	2,500	4,570	4.57	5.27	281,000	A.
April.....	7,270	3,240	4,340	4.34	4.84	258,000	A.
May.....	13,200	3,240	5,000	5.00	5.76	307,000	A.
June.....	7,270	2,360	4,470	4.47	4.99	266,000	A.
July.....	2,360	1,240	1,600	1.60	1.84	98,400	A.
August.....	1,200	985	1,090	1.09	1.26	67,000	A.
September.....	1,860	985	1,120	1.12	1.25	66,600	A.
The year.....	26,800	890	3,480	3.48	47.00	2,510,000	
1906-7.							
October.....	2,500	952	1,260	1.26	1.45	77,500	A.
November.....	12,800	985	4,120	4.12	4.60	245,000	A.
December.....	11,900	1,650	5,500	5.50	6.34	338,000	A.
January.....	23,900	2,640	7,030	7.03	8.10	432,000	A.
February.....	58,600	4,510	13,400	13.4	13.95	744,000	B.
March.....	71,500	3,240	6,490	6.49	7.48	399,000	A.
April.....	30,200	2,570	9,000	9.00	10.04	536,000	A.
May.....	3,760	2,500	3,240	3.24	3.74	199,000	A.
June.....	3,080	1,550	2,380	2.38	2.66	142,000	A.
July.....	1,920	1,330	1,540	1.54	1.78	94,700	A.
August.....	1,460	1,170	1,260	1.26	1.45	77,500	A.
September.....	1,460	1,090	1,170	1.17	1.30	69,600	A.
The year.....	71,500	952	4,630	4.70	62.89	3,350,000	
1907-8.							
October.....	1,370	1,060	1,110	1.11	1.28	68,200	A.
November.....	12,400	1,130	2,840	2.84	3.17	169,000	A.
December.....	45,500	2,430	11,600	11.6	13.37	713,000	A.
January.....	12,400	3,240	6,740	6.74	7.77	414,000	A.
February.....	6,800	2,930	3,990	3.99	4.30	230,000	A.
March.....	5,300	2,710	3,520	3.52	4.06	216,000	A.
April.....	6,150	2,780	4,360	4.36	4.86	259,000	A.
May.....	6,370	2,930	4,250	4.25	4.90	261,000	A.
June.....	4,130	2,500	3,020	3.02	3.37	180,000	A.
July.....	2,500	1,860	2,140	2.14	2.47	132,000	A.
August.....	1,980	1,130	1,450	1.45	1.67	89,200	A.
September.....	1,200	800	1,020	1.02	1.14	60,700	A.
The year.....	45,500	800	3,840	3.84	52.36	2,790,000	

NORTH UMPQUA RIVER AT WINCHESTER, OREG.

Location.—In sec. 25, T. 26 S., R. 6 W., at Southern Pacific Railroad bridge in Winchester, 300 yards below power plant, and 400 yards below the highway bridge; about 5 miles north of Roseburg.

Records presented.—November 10, 1908, to September 30, 1910.

Drainage area.—1,080 square miles.

Gage.—Vertical staff in three sections, bolted to left face of left railroad bridge pier; lower section reading 0 to 3.1, middle 3.0 to 18.0, and upper 18.0 to 23.0 feet.

Channel.—Rock and gravel; practically permanent; one channel at high and low stages, two at medium.

Discharge measurements.—Made from railroad bridge at low and medium stages, in higher water from highway bridge.

Accuracy.—Records fair.

Discharge measurements of North Umpqua River at Winchester, Oreg., in 1908-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1908. Nov. 10	H. D. McGlashan	<i>Fect.</i> 1.86	<i>Sec.-ft.</i> 1,270	1910. Aug. 23	F. C. Ebert.....	<i>Fect.</i> 1.63	<i>Sec.-ft.</i> 954

Daily gage height, in feet, of North Umpqua River at Winchester, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....			2.6	3.5	3.45	5.6	3.7	3.15	4.1	2.3	1.9	1.7
2.....			2.5	3.4	3.55	6.0	3.9	3.3	4.1	2.3	1.9	1.7
3.....			2.45	4.3	4.2	5.7	3.8	3.55	3.85	2.25	1.85	1.75
4.....			2.35	7.3	4.2	5.5	3.65	3.8	3.7	2.25	1.85	1.7
5.....			2.3	9.6	4.0	5.0	3.6	3.6	3.55	2.2	1.85	1.6
6.....			2.25	8.3	3.85	4.8	3.5	3.4	3.35	2.8	1.8	1.7
7.....			2.2	9.4	3.8	4.4	3.35	3.3	3.2	2.8	1.8	1.6
8.....			2.2	8.7	3.6	4.4	3.3	3.25	3.1	2.5	1.9	1.7
9.....			2.15	6.4	4.0	4.8	3.3	3.2	3.0	2.4	1.75	1.6
10.....		1.85	2.1	5.2	3.85	4.5	3.4	3.2	3.0	2.3	1.8	1.6
11.....	1.8	2.1	4.6	3.9	4.3	3.35	3.3	2.95	2.3	1.8	1.6	
12.....	1.8	2.0	4.2	4.2	4.0	3.25	3.2	2.95	2.25	1.8	1.65	
13.....	1.8	2.3	4.2	5.9	3.9	3.25	3.05	2.9	2.2	1.8	1.65	
14.....	1.8	2.65	4.9	5.8	4.0	3.35	3.0	2.85	2.15	1.8	1.65	
15.....		1.8	2.5	9.0	5.8	4.0	3.35	3.0	2.8	2.1	1.7	1.7
16.....	1.75	2.4	12.0	6.2	4.3	3.35	2.9	2.9	2.1	1.7	1.65	
17.....	1.7	2.35	9.8	9.1	4.3	3.3	2.9	2.8	2.05	1.75	1.6	
18.....	1.9	2.15	11.4	7.3	4.0	3.3	2.85	2.8	2.05	1.7	1.6	
19.....	2.9	2.1	10.1	7.2	3.85	3.3	2.8	2.7	2.1	1.7	1.45	
20.....	3.55	2.15	12.2	6.4	3.3	3.35	2.8	2.65	2.05	1.7	1.45	
21.....	4.8	2.2	13.3	6.0	3.55	3.1	2.8	2.55	2.0	1.7	1.5	
22.....	5.7	2.4	9.6	5.2	3.45	3.05	2.8	2.5	2.0	1.7	1.5	
23.....	5.0	3.0	7.4	4.8	3.35	3.05	2.75	2.5	2.0	1.7	1.5	
24.....	4.8	4.3	6.0	5.3	3.35	3.0	2.7	2.5	1.95	1.7	1.55	
25.....	4.3	3.5	5.2	5.9	3.3	3.0	2.7	2.5	1.95	1.55	1.6	
26.....	3.8	4.9	4.6	5.4	3.4	3.05	2.8	2.45	1.95	1.7	1.6	
27.....	3.35	4.9	4.3	5.2	3.4	3.35	3.3	2.45	2.0	1.65	1.65	
28.....	3.05	4.55	3.95	5.6	3.4	3.6	3.55	2.4	2.0	1.55	1.65	
29.....	2.95	6.2	3.8	.....	3.6	3.4	4.1	2.4	1.9	1.65	1.7	
30.....	2.75	4.65	3.65	.....	3.55	3.25	3.8	2.3	1.9	1.65	2.1	
31.....	.....	3.95	3.95	.....	.....	3.6	.....	4.2	.....	1.9	1.65	.....

Daily gage height, in feet, of North Umpqua River at Winchester, Oreg., for 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2.05	4.85	7.2	4.6	5.0	14.5	3.7	3.4	2.6	2.1	1.7	1.55
2.....	1.9	3.7	6.1	4.1	4.6	10.0	3.8	3.25	2.6	2.1	1.75	1.8
3.....	1.8	3.35	5.4	3.7	4.3	8.5	4.2	3.35	2.55	2.1	1.7	1.5
4.....	1.75	2.75	4.9	3.55	4.0	7.5	4.2	3.4	2.5	2.1	1.7	1.6
5.....	1.65	2.55	4.8	3.4	3.9	6.8	4.0	3.4	2.5	2.05	1.7	1.55
6.....	1.6	3.15	4.4	3.35	3.75	6.0	4.0	3.25	2.45	2.05	1.75	1.65
7.....	1.8	2.85	4.4	3.45	3.65	5.4	3.9	3.2	2.45	2.05	1.8	1.6
8.....	1.7	2.6	4.6	3.45	3.05	5.0	3.75	3.25	2.35	2.05	1.75	1.65
9.....	1.7	3.25	8.3	3.3	3.0	4.8	3.9	3.3	2.35	2.0	1.7	1.65
10.....	1.6	4.0	6.2	3.2	3.7	4.7	3.9	4.2	2.3	2.0	1.7	1.65
11.....	1.75	4.4	5.4	3.15	3.8	4.8	3.85	4.3	2.45	2.0	1.75	1.6
12.....	1.75	3.55	7.3	3.1	3.05	4.8	3.8	3.95	2.55	2.05	1.7	1.65
13.....	1.65	3.25	9.0	3.0	4.0	5.0	3.7	3.7	2.45	1.9	1.7	1.6
14.....	1.6	3.1	6.8	3.1	4.2	5.0	3.55	3.5	2.35	1.9	1.7	1.7
15.....	1.6	2.8	5.8	3.05	4.1	4.9	3.5	3.35	2.3	1.9	1.7	1.65
16.....	1.6	2.6	5.1	3.0	3.95	4.8	3.5	3.3	2.35	2.0	1.7	1.65
17.....	1.5	2.5	4.8	3.1	3.8	4.7	3.5	3.1	2.5	1.9	1.65	1.65
18.....	1.65	2.7	4.5	3.0	4.1	4.6	3.55	3.05	2.35	1.9	1.65	1.6
19.....	1.5	5.8	4.3	3.85	7.3	4.8	3.8	2.95	2.35	1.9	1.65	1.6
20.....	2.15	14.5	4.1	3.5	5.9	4.6	4.0	2.9	2.4	1.8	1.65	1.75
21.....	2.2	7.6	3.85	3.45	5.0	4.4	3.75	2.85	2.4	1.8	1.6	1.8
22.....	2.1	21.4	3.7	4.9	4.8	4.8	3.65	2.9	2.4	1.8	1.7	1.75
23.....	1.85	23.3	3.5	6.3	4.7	6.1	3.7	2.9	2.4	1.75	1.6	1.7
24.....	1.75	13.5	3.45	6.2	5.1	5.2	3.75	2.9	2.3	1.8	1.65	1.7
25.....	1.8	9.5	3.4	5.4	7.7	4.7	3.8	2.9	2.2	1.8	1.65	1.7
26.....	1.75	7.4	3.35	4.9	6.9	4.5	3.8	2.9	2.2	1.8	1.6	1.65
27.....	1.7	6.0	3.25	4.5	6.6	4.3	3.65	2.8	2.15	1.8	1.6	1.65
28.....	1.6	6.6	3.05	7.4	10.8	4.1	3.5	2.8	2.15	1.7	1.65	1.65
29.....	1.9	6.3	3.1	6.6	-----	3.95	3.35	2.75	2.1	1.7	1.7	1.65
30.....	2.25	9.2	3.1	5.6	-----	3.7	3.5	2.7	2.1	1.75	1.6	1.65
31.....	2.35	-----	5.7	5.3	-----	3.7	-----	2.6	-----	1.8	1.7	-----

NOTE.—No ice at this station.

Daily discharge, in second-feet, of North Umpqua River at Winchester, Oreg., for 1908-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9												
1.....	-----	-----	1,890	3,120	3,040	7,230	3,440	2,610	4,130	1,580	1,180	1,010
2.....	-----	-----	1,780	2,970	3,200	8,180	3,780	2,820	4,130	1,580	1,180	1,010
3.....	-----	-----	1,730	4,500	4,310	7,460	3,610	3,200	3,700	1,530	1,140	1,050
4.....	-----	-----	1,630	11,300	4,310	7,000	3,300	3,610	3,440	1,530	1,140	1,010
5.....	-----	-----	1,580	17,200	3,950	5,920	3,280	3,280	3,200	1,480	1,140	930
6.....	-----	-----	1,530	13,800	3,700	5,500	3,120	2,970	2,900	2,130	1,090	1,010
7.....	-----	-----	1,480	16,700	3,610	4,700	2,900	2,820	2,680	2,130	1,090	930
8.....	-----	-----	1,480	14,900	3,280	4,700	2,820	2,750	2,540	1,780	1,180	1,010
9.....	-----	-----	1,430	9,140	3,950	5,500	2,820	2,680	2,400	1,680	1,050	930
10.....	-----	1,140	1,380	6,340	3,700	4,900	2,970	2,680	2,400	1,580	1,090	930
11.....	-----	1,090	1,380	5,100	3,780	4,500	2,900	2,820	2,330	1,580	1,090	930
12.....	-----	1,090	1,280	4,310	4,310	3,950	2,750	2,680	2,330	1,530	1,090	970
13.....	-----	1,090	1,580	4,310	7,940	3,780	2,750	2,470	2,200	1,480	1,090	970
14.....	-----	1,090	1,950	5,710	7,700	3,950	2,900	2,400	2,200	1,430	1,090	970
15.....	-----	1,090	1,780	15,700	7,700	3,950	2,900	2,400	2,130	1,380	1,010	1,010
16.....	-----	1,050	1,680	23,500	8,660	4,500	2,900	2,260	2,260	1,380	1,010	970
17.....	-----	1,010	1,630	17,800	15,900	4,500	2,820	2,260	2,130	1,330	1,050	930
18.....	-----	1,180	1,430	21,900	11,300	3,950	2,820	2,200	2,130	1,330	1,010	930
19.....	-----	2,200	1,380	18,500	11,100	3,700	2,820	2,130	2,010	1,380	1,010	825
20.....	-----	3,200	1,430	23,700	9,140	2,820	2,900	2,130	1,950	1,330	1,010	825
21.....	-----	5,700	1,480	26,900	8,180	3,200	2,540	2,130	1,840	1,280	1,010	860
22.....	-----	7,400	1,680	17,200	6,340	3,010	2,470	2,130	1,780	1,280	1,010	860
23.....	-----	5,920	2,400	11,600	5,500	2,900	2,470	2,070	1,780	1,280	1,010	860
24.....	-----	5,500	4,500	8,180	6,500	2,900	2,400	2,010	1,780	1,230	1,010	895
25.....	-----	4,500	3,120	6,340	7,940	2,820	2,400	2,010	1,780	1,230	895	930
26.....	-----	3,610	5,710	5,100	6,780	2,970	2,470	2,130	1,730	1,230	1,010	930
27.....	-----	2,900	5,710	4,500	6,340	2,970	2,900	2,820	1,730	1,280	970	970
28.....	-----	2,470	5,000	3,800	7,230	2,970	3,280	3,200	1,680	1,280	895	970
29.....	-----	2,330	8,060	3,610	-----	3,280	2,970	4,130	1,680	1,180	970	1,010
30.....	-----	2,070	5,200	3,860	-----	3,200	2,750	3,610	1,580	1,180	970	1,380
31.....	-----	-----	3,800	3,860	-----	3,280	-----	4,310	-----	1,180	970	-----

Daily discharge, in second-feet of North Umpqua River at Winchester, Oreg., for 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10												
1.....	1,330	5,600	11,100	5,100	5,920	30,100	3,440	2,970	1,890	1,380	1,010	895
2.....	1,180	3,440	8,420	4,130	5,100	18,300	3,610	2,750	1,890	1,380	1,050	1,090
3.....	1,090	2,900	6,780	3,440	4,500	14,400	4,310	2,900	1,840	1,380	1,010	800
4.....	1,050	2,070	5,710	3,200	3,950	11,800	4,310	2,970	1,780	1,380	1,010	930
5.....	970	1,840	5,500	2,970	3,780	10,100	3,950	2,970	1,780	1,330	1,010	835
6.....	930	2,610	4,700	2,900	3,520	8,180	3,950	2,750	1,730	1,330	1,050	970
7.....	1,090	2,200	4,700	3,040	3,360	6,780	3,780	2,680	1,730	1,330	1,090	930
8.....	1,010	1,890	5,100	3,040	2,470	5,920	3,520	2,750	1,630	1,330	1,050	970
9.....	1,010	2,750	13,800	2,820	2,400	5,500	3,780	2,820	1,630	1,280	1,010	970
10.....	930	3,950	8,660	2,680	3,440	5,300	3,780	4,310	1,580	1,280	1,010	970
11.....	1,050	4,700	6,780	2,610	3,610	5,500	3,700	4,500	1,730	1,280	1,050	930
12.....	1,050	3,200	11,300	2,540	2,470	5,500	3,610	3,860	1,840	1,330	1,010	970
13.....	970	2,750	15,700	2,400	3,950	5,920	3,440	3,440	1,730	1,180	1,010	930
14.....	930	2,540	10,100	2,540	4,310	5,920	3,200	3,120	1,630	1,180	1,010	1,010
15.....	930	2,130	7,700	2,470	4,130	5,710	3,120	2,900	1,580	1,180	1,010	970
16.....	930	1,890	6,130	2,400	3,860	5,500	3,120	2,820	1,630	1,280	1,010	970
17.....	860	1,780	5,500	2,540	3,610	5,300	3,120	2,540	1,780	1,180	970	970
18.....	970	2,010	4,900	2,400	4,130	5,100	3,200	2,470	1,630	1,180	970	930
19.....	860	7,700	4,500	3,700	11,300	5,500	3,610	2,330	1,630	1,180	970	930
20.....	1,430	30,100	4,130	3,120	7,940	5,100	3,950	2,200	1,680	1,090	970	1,050
21.....	1,480	12,100	3,700	3,040	5,920	4,700	3,520	2,200	1,680	1,090	930	1,090
22.....	1,380	48,800	3,440	5,710	5,500	5,500	3,360	2,260	1,680	1,090	1,010	1,050
23.....	1,140	53,900	3,120	8,900	5,300	8,420	3,440	2,260	1,680	1,050	930	1,010
24.....	1,050	27,400	3,040	8,660	6,130	6,340	3,520	2,260	1,580	1,090	970	1,010
25.....	1,030	17,000	2,970	6,780	12,300	5,300	3,610	2,260	1,480	1,090	970	1,010
26.....	1,050	11,600	2,900	5,710	10,300	4,900	3,610	2,260	1,480	1,090	930	970
27.....	1,010	8,180	2,750	4,900	9,620	4,500	3,360	2,130	1,430	1,090	930	970
28.....	930	9,620	2,470	11,600	20,400	4,130	3,120	2,130	1,430	1,010	970	970
29.....	1,180	8,900	2,540	9,620	.....	3,800	2,900	2,070	1,380	1,010	1,010	970
30.....	1,530	16,200	2,540	7,230	.....	3,440	3,120	2,010	1,380	1,050	930	970
31.....	1,630	.....	7,460	6,560	.....	3,440	.....	1,890	.....	1,090	1,010	.....

NOTE.—Discharge determined from a curve fairly well defined between 800 and 12,000 second-feet.

Monthly discharge of North Umpqua River at Winchester, Oreg., for 1908-1910.

[Drainage area, 1,080 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1908-9.							
November 10-30.....	7,460	1,010	2,750	2.55	1.99	115,000	B.
December.....	8,660	1,280	2,540	2.35	2.71	156,000	B.
January.....	26,900	2,970	10,800	10.00	11.53	664,000	B.
February.....	15,900	3,040	6,410	5.94	6.18	356,000	B.
March.....	8,180	2,820	4,330	4.01	4.62	266,000	B.
April.....	3,780	2,400	2,910	2.69	3.00	173,000	B.
May.....	4,310	2,010	2,700	2.50	2.88	166,000	B.
June.....	4,130	1,580	2,350	2.18	2.43	140,000	B.
July.....	2,130	1,180	1,440	1.33	1.53	88,500	B.
August.....	1,180	895	1,050	.972	1.12	64,600	B.
September.....	1,380	825	960	.889	.99	57,100	C.
The period.....						2,250,000	
1909-10.							
October.....	1,630	860	1,100	1.02	1.18	67,600	C.
November.....	53,900	1,780	10,100	9.35	10.43	601,000	C.
December.....	15,700	2,470	6,070	5.62	6.48	373,000	B.
January.....	11,600	2,400	4,480	4.15	4.78	275,000	B.
February.....	20,400	2,400	5,830	5.40	5.62	324,000	B.
March.....	30,100	3,440	7,290	6.75	7.78	448,000	B.
April.....	4,310	2,900	3,540	3.28	3.66	211,000	B.
May.....	4,500	1,890	2,700	2.50	2.88	166,000	B.
June.....	1,890	1,380	1,650	1.53	1.71	98,200	B.
July.....	1,380	1,010	1,200	1.11	1.28	73,800	B.
August.....	1,090	930	996	.922	1.06	61,200	C.
September.....	1,090	860	972	.900	1.00	57,800	C.
The year.....	53,900	860	3,800	3.52	47.86	2,760,000	

MILL CREEK NEAR ASH, OREG.

Location.—In sec. 11, T. 23 S., R. 10 W., at the outlet of Loon Lake, about 12 miles south of Scottsburg.

Records presented.—May 29, 1907, to September 30, 1910.

Drainage area.—81 square miles.

Gage.—Vertical staff.

Channel.—Boulders and gravel; shifting.

Discharge measurements.—Made by wading. No equipment provided for high-water measurements.

Cooperation.—Maintained in cooperation with J. G. Kelley, of Portland, Oreg.

Estimates of discharge withheld for additional data.

Discharge measurements of Mill Creek near Ash, Oreg., in 1907.

Date.	Hydrographer.	Gage height.	Discharge.
May 29	J. C. Stevens	<i>Fect.</i> 4.70	<i>Sec.-ft.</i> 85.0
Sept. 26	E. F. Kriegsman	2.85	5.1

Daily gage height, in feet, of Mill Creek near Ash, Oreg., for 1907-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1									4.5	3.8		
2									4.5			
3												
4											3.2	
5												
6												
7										3.7		
8											3.2	
9									4.1			
10												
11											3.2	
12												
13									4.7		3.2	
14									4.8			
15									4.8	3.5		2.7
16									4.6		3.1	
17												
18								4.7				
19								4.7				
20												
21										3.4		
22												2.8
23										4.1	2.9	
24												
25												
26												2.85
27												
28										3.3		
29								4.7				
30								4.6				
31								4.55				

Daily gage height, in feet, of Mill Creek near Ash, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.			6.6	9.5	6.0	7.4	7.3	5.3	5.25		3.38	3.0
2.		3.1	6.3	9.7	5.95	8.5	7.4	5.3	5.2	4.3	3.38	3.0
3.			6.1	9.3	5.85	8.6	7.2	5.7	5.15		3.38	
4.			6.0	8.8	6.0	8.3	7.0	6.35	5.1		3.3	
5.			6.3	8.4	6.35	8.0	6.7	6.4	5.05	4.1	3.25	
6.			6.4	8.1	7.0	7.5	6.5	6.1		4.1		
7.			6.6	7.7	8.2	7.3	6.4	6.0		4.05		2.9
8.			6.9	7.5	8.1	7.1	6.4	5.9	4.85		3.2	2.9
9.		3.5	7.0	7.9		6.9	6.2	5.8	4.8			2.9
10.			6.9	8.1	7.2		6.05	5.7				2.9
11.			7.9	8.1	7.2	6.7	5.9	5.5				
12.	3.2		8.8	7.7	7.15			5.4		3.9	3.1	
13.			9.8	7.5	7.1	6.5	5.7	5.45	4.5			
14.			11.0	7.3	7.0	6.4	5.6	5.35				
15.	3.0	3.4	9.9	7.1	6.9	6.4	5.6	5.35		3.7	3.05	2.9
16.			8.8	6.9	6.85	6.6	5.55	5.4	4.4	3.7	3.05	
17.			8.0	6.8	7.0	6.8		5.5	4.35	3.7	3.02	
18.	2.9	3.5	7.8	6.7	7.0	6.9	5.5	5.9	4.35	3.7	3.02	2.85
19.			3.6	7.3	6.7	6.9	6.8	5.5	6.3	4.35	3.7	3.02
20.			4.2	8.5	7.3	6.8	6.7	5.4		4.4	3.68	3.02
21.			6.3	9.5	8.1	6.7	6.5	6.6	5.0	3.62	3.0	
22.			6.4	12.5	8.0	6.55	6.35	5.2	6.4	5.0	3.6	3.0
23.			6.7	13.0	7.6	6.35		5.1	6.3	5.0	3.6	3.0
24.			8.5	11.6	7.3	6.3	6.4	5.55	6.2	4.9	3.55	2.98
25.			9.7	13.4	7.0	6.2	6.4	6.2	6.0	4.8		2.98
26.	2.8	9.0	15.5	6.9	6.1			6.2	5.8	4.7	3.5	2.95
27.		8.8	13.4	6.65	6.0		6.0	6.0	4.65	3.5	2.95	2.68
28.			11.9	6.4	6.0	6.85	5.9	5.6	4.6			2.95
29.			10.1	6.35	6.4	6.8	5.7	5.45	4.5	3.48	2.9	
30.		6.8		6.3		6.8	5.55	5.4	4.4	3.45	3.0	
31.				6.1		6.9		5.3		3.4	3.0	
1908-9.												
1.			5.9	7.7	7.5	8.8	5.7	4.5	5.65	3.68	3.2	2.75
2.			5.8	7.5	7.8	8.7	5.8	4.45	5.45	3.02	3.2	2.75
3.			5.6	7.3	9.6	9.0	5.9	4.4		3.62	3.18	2.72
4.			5.5	8.2	9.8	8.8	5.8	4.35		3.6	3.15	2.72
5.			5.3	8.75	9.5	8.75	5.85	4.3		3.58	3.12	2.7
6.	2.6		5.25	10.2	9.4	8.7	5.8	4.3		3.6	3.1	2.7
7.			5.2	10.5	9.5	8.3	5.75	4.25	4.62	3.68	3.1	2.68
8.	2.6		5.05	11.0	9.4	8.0	5.65	4.2	4.5	3.72	3.08	2.68
9.			5.0	10.05	9.2	8.0	5.55	4.2	4.05	3.7	3.05	2.65
10.		4.0	5.0	9.6	9.5	7.9	5.5	4.28	4.35	3.7	3.02	2.65
11.	2.4	3.95	4.9	8.8	9.5	7.2	5.42	4.5	4.3	3.68	3.0	2.62
12.		3.9	4.85	8.1	9.1	7.3	5.4		4.2	3.68	3.0	2.6
13.		3.85	5.3	7.8	8.9	7.1	5.3		4.15	3.65	3.0	2.58
14.		3.8	6.0	7.4	9.6	6.9	5.2		4.1	3.6	2.98	2.58
15.	5.3	3.75	6.45	8.5	9.4	6.75	5.15		4.08	3.58	2.98	2.55
16.	6.0		6.5	13.0	9.1	6.6	5.1		4.08	3.55	2.95	2.52
17.	6.0		6.4	12.0	9.7	6.45	5.02		4.1	3.52	2.92	2.5
18.			6.3	11.4	10.3	6.4	4.92		4.08	3.48	2.9	2.5
19.			6.2	10.5	10.6	6.25	4.9		4.02	3.45	2.88	2.48
20.		4.6	5.95	11.4	10.5	6.2	4.98		4.0	3.42	2.88	2.48
21.		5.7	5.9	12.05	10.4	6.3	4.8	4.12	3.95	3.4	2.88	2.5
22.		6.6	5.9	13.0	9.9	6.4	4.78	4.15	3.92	3.38	2.88	2.5
23.	4.8	7.6	6.5	12.0	9.2	6.3	4.72	4.1	3.9	3.35	2.88	2.48
24.		8.35	9.0	10.3	8.8	6.2	4.68	4.05	3.85	3.32	2.85	2.48
25.		8.1	8.25	9.4	9.8	6.05	4.65	4.02	3.82	3.3	2.85	2.52
26.		7.6	9.05	8.8	10.6	5.9	4.6	4.0	3.8	3.3	2.85	2.55
27.		7.2	9.1	8.1	9.8	5.8	4.6	4.0	3.78	3.28	2.82	2.58
28.	4.0	6.8		7.9	9.3	5.75	4.6	4.08	3.78	3.28	2.82	2.6
29.	3.95	6.5		7.7		5.7	4.6	4.6	3.72	3.28	2.8	2.62
30.		6.2		8.75	7.5		5.65	4.55	3.7	3.25	2.78	2.7
31.	4.5			8.3	7.5		5.6	5.3	3.7	3.22	2.78	

Daily gage height, in feet, of Mill Creek near Ash, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2.8	6.9	-----	7.35	8.0	10.9	5.4	5.1	4.05	3.6	2.85	2.3
2.....	2.9	6.85	8.6	7.25	7.6	10.9	5.35	5.05	4.0	3.55	2.85	2.3
3.....	3.0	6.5	8.3	6.85	7.3	9.9	5.8	5.0	4.0	3.5	2.85	2.3
4.....	3.0	6.2	7.8	6.6	7.1	9.5	6.0	5.0	3.9	3.5	2.8	2.3
5.....	3.02	5.9	7.7	6.4	6.95	8.7	6.05	4.95	3.9	3.5	2.8	2.3
6.....	2.98	5.85	7.55	6.3	6.85	8.3	-----	4.9	3.9	3.5	2.8	2.25
7.....	-----	5.9	7.7	6.45	6.75	7.9	-----	4.9	3.85	3.45	2.8	2.2
8.....	-----	6.6	8.7	7.4	6.65	7.5	-----	4.8	3.85	3.4	2.75	2.2
9.....	-----	7.9	10.0	7.8	6.6	7.3	5.6	4.7	3.8	3.4	2.75	2.2
10.....	-----	8.6	-----	7.45	6.7	7.1	5.6	4.7	3.8	3.4	2.7	2.2
11.....	-----	9.1	-----	7.2	6.85	6.9	6.0	4.7	3.8	3.35	2.7	2.15
12.....	-----	8.6	-----	7.0	7.05	6.7	7.3	4.7	3.8	3.3	2.65	2.15
13.....	2.92	7.85	10.2	6.8	7.1	6.5	7.25	4.65	3.8	3.3	2.65	2.1
14.....	2.92	7.45	9.9	6.7	8.1	6.4	6.9	4.6	3.8	3.25	2.6	2.1
15.....	2.9	7.1	9.0	6.7	8.7	6.25	6.65	4.5	3.8	3.2	2.6	2.1
16.....	2.88	6.85	8.3	6.7	8.45	6.1	6.4	4.5	3.8	3.2	2.6	2.1
17.....	2.88	6.7	7.8	7.0	8.2	6.0	6.25	4.4	3.75	3.15	2.6	2.1
18.....	2.88	6.4	7.55	7.4	8.3	5.9	6.1	4.4	3.7	3.15	2.6	2.1
19.....	2.92	6.9	7.1	8.6	9.15	5.8	6.0	4.35	3.7	3.1	2.55	2.1
20.....	3.28	9.7	6.9	8.8	9.1	5.85	5.85	4.3	3.7	3.1	2.5	2.1
21.....	3.95	10.02	6.7	8.4	8.7	5.95	5.75	4.3	3.8	3.1	2.5	2.15
22.....	4.58	13.2	6.5	8.0	8.45	5.9	5.65	4.25	3.9	3.1	2.5	2.15
23.....	4.6	21.4	6.4	8.0	8.6	6.0	5.55	4.2	3.9	3.1	2.45	2.15
24.....	4.45	16.6	6.3	8.6	9.0	6.05	5.45	4.2	3.85	3.05	2.45	2.15
25.....	4.3	13.0	6.2	9.0	9.55	6.1	5.4	4.2	3.8	3.0	2.4	2.1
26.....	4.15	11.4	6.1	9.2	9.65	6.05	5.3	4.15	3.8	3.0	2.4	2.1
27.....	4.02	9.7	6.0	9.3	9.6	5.95	5.2	4.1	3.7	3.0	2.4	2.1
28.....	4.0	8.9	5.7	9.3	10.25	5.9	5.1	4.1	3.7	2.95	2.4	2.1
29.....	4.1	8.9	5.8	9.4	-----	5.75	5.15	4.1	3.65	2.9	2.4	2.1
30.....	4.85	-----	5.8	9.0	-----	5.65	5.1	4.1	3.6	2.9	2.35	2.1
31.....	5.5	-----	6.5	8.5	-----	5.5	-----	4.1	-----	2.9	2.3	-----

NOTE.—Temporary dam erected across the outlet of the lake in 1909 was partly washed out by high water in the spring of 1910, but some of it remained and affected the discharge relation during the summer of 1910.

ROGUE RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Rogue River drains the southwestern corner of the State of Oregon, its basin extending from the extreme western part of Klamath County across Jackson and Josephine counties, and including the northern half of Curry County. On its north are the Rogue River Mountains, on the east are the Cascades, and in the southern part of the area is a spur of the Siskiyou Mountains. In all the basin comprises 5,080 square miles.

The river is formed by three principal forks—the North, Middle, and South—which rise among the peaks of the Cascade Range and unite near Prospect, in Jackson County. From this point the Rogue winds in a general westerly direction to the ocean, which it enters near the town of Gold Beach, in Curry County. In the lower half of its course the stream hugs closely the base of the Rogue River Range, and its principal tributaries are from the south, as is shown by the following table:

Principal tributaries of Rogue River.

From the north and west.

North Fork.
Elk Creek.
Stewart Creek.
Evans Creek.
Leland Creek.

From the east and south.

Middle Fork.
South Fork.
Big Butte Creek (drainage area, 268 square miles).
Little Butte Creek (drainage area, 361 square miles).
Bear Creek (Stewart Creek) (drainage area, 380 square miles).
Applegate River (drainage area, 606 square miles).
Illinois River.

The North Fork, or main stream, derives its water from springs, possibly supplied from Crater Lake, which lies to the east in the center of Crater Lake National Park, at an elevation of 6,240 feet above sea level. This lake occupies the crater of an ancient volcanic mountain to which the name Mount Mazama has been applied. The lake has no visible outlet¹ nor any other reaching the surface within a few miles. The walls inclosing the lake are made up of alternating sheets of lava, dipping away from the lake practically in all directions, and are so porous as to afford an easy passage for much water. Springs are abundant and remarkable in size. Little and Big Butte creeks drain the southern portion of the Cascade Forest Reserve. Bear Creek, formerly called Stewart Creek, drains the famous fruit section of Rogue River Valley; Applegate River drains the Siskiyou Mountains; and Illinois River the territory to the south of the main stream near the coast.

The drainage area is in general mountainous, elevations ranging from sea level at Gold Beach to 9,760 feet at the summit of Mount McLoughlin (formerly known as Mount Pitt)—a snow-capped peak dividing the drainage of Big Butte and Little Butte creeks. The general elevation of the mountain range at the headwaters of the Rogue is 6,000 feet. Prospect is 3,000 feet, Ashland is 1,938 feet, and Grants Pass 956 feet above sea level.

The area is almost completely timbered, but the stand is not so heavy as on the area to the north drained by Umpqua River, as the precipitation is lighter. The mean annual rainfall at Gold Beach is 86 inches, at Grants Pass 33, at Ashland 27, on the headwaters of Illinois River 70, and at Crater Lake 100 inches. At the headwaters of the stream the greater part of the precipitation is rain during the winter months.

¹ Diller, J. S., *Geology of Crater Lake National Park*; U. S. Geol. Survey Prof. Paper 3, p. 60, 1902.

As is usual in regions where the precipitation is sufficient for the production of crops without irrigation, development along this line is inconsiderable. The ditch of the Rogue River Valley Canal Co., which diverts water from Little Butte Creek, is the largest in operation. A number of little ditches are used to irrigate the narrow valley lands contiguous to the small streams. In this manner Ashland and Wagner creeks and Applegate River are largely appropriated for irrigation. It is realized, however, that the agricultural resources of this section of the country will not be utilized in the most economic manner until irrigation is practiced extensively. The valley lands in the vicinity of Grants Pass along Bear Creek are particularly adapted to fruit culture, and the Rogue River Valley has become justly famous for the excellent quality of apples, pears, and other fruits raised there.

The streams of this area, like others draining the Cascade Range afford wonderful possibilities for water-power development. At present the only important plants are those of the California-Oregon Power Co. at Gold Ray and at Prospect.

Stream measurements in this basin were begun in August, 1905. The highest run-off values are shown by the records for 1907. It is probable that the lowest values would have been found in 1905 if records for that year had been complete.

ROGUE RIVER NEAR PROSPECT, OREG.

Location.—In sec. 20, T. 32 S., R. 3 E., 2 miles north of Prospect and 2½ miles above Mill Creek.

Records presented.—July 17 to October 31, 1907; January 6, 1908, to September 30, 1910.

Drainage area.—263 square miles.

Gage.—Vertical staff on left bank back of observer's house. Gage read in 1907 was a vertical staff in sec. 29, T. 32 S., R. 3 E., 1½ miles below present gage.

Channel.—Rocks and bowlders; practically permanent.

Discharge measurements.—Made from a cable about one-half mile below the gage.

Accuracy.—Results good.

Cooperation.—Gage-height record furnished by the California-Oregon Power Co., formerly the Rogue River Electric Co.

Discharge measurements of Rogue River near Prospect, Oreg., in 1907-8, 1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1907.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 17	Stevens and McGlashan	2.43	663	Sept. 19	H. Kimble.....	^a 1.60	438
Aug. 26	C. E. Ellsworth.....	2.25	476				
27	.....do.....	2.23	430	1910.			
Sept. 15	.....do.....	2.13	416	Aug. 22	Ebert and Heintzleman	1.00	464
Oct. 31	.....do.....	2.10	485	23	.....do.....	1.00	465

^a Observer's reading on gage at house.

NOTE.—Three gages used in 1907, 1908, and 1910.

Daily gage height, in feet, of Rogue River near Prospect, Oreg., for 1907-1910.

[Gage 250 feet above dam.]

Day.	July.	Aug.	Sept.	Oct.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.
1907-8.												
1		2.31	2.38	2.18				2.4				
2		2.31	2.22	2.17		2.3	2.6					
3		2.30	2.20	2.16					3.2			
4		2.30	2.20	2.15								
5		2.30	2.20	2.14		2.3		2.5				
6		2.30	2.19	2.12			2.2		3.0			
7		2.29	2.19	2.10		2.4				2.7		
8		2.42	2.18	2.09			2.2					
9		2.70	2.18	2.07		2.4						
10		2.40	2.17	2.06					3.0			
11		2.36	2.17				2.2					
12		2.32	2.16			2.3		2.8				
13		2.30	2.15				2.3					
14		2.28	2.15			2.2				2.9		
15		2.28	2.15		2.9		3.4					
16		2.27	2.22			2.2						
17	2.43	2.26	2.25		2.7				2.8			
18	2.42	2.25	2.20				3.0					
19	2.40	2.25	2.18			2.2		3.3				
20	2.40	2.24	2.16									
21	2.40	2.23	2.16			2.2						
22	2.40	2.23	2.15				2.8	3.3				
23	2.40	2.22	2.15									
24	2.38	2.40	2.15			2.2			2.9			
25	2.37	2.30	2.15				2.9					
26	2.36	2.26	2.15		2.5	2.2		3.1				
27	2.35	2.24	2.15						2.8			
28	2.35	2.23	2.20			2.4						
29	2.34	2.22	2.18		2.4		2.6	3.2				
30	2.33	2.21	2.18									
31	2.32	2.21			2.2				2.8			

[Gage at observer's house.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908.												
1					1.8	2.2	2.0	2.7	2.4	2.3	1.5	1.6
2					1.9	2.2	2.0	2.7	2.4	2.2	1.5	1.6
3					1.8	2.0	2.0	2.8	2.4	2.0	1.5	1.6
4					1.8	1.9	2.0	2.7	2.4	2.0	1.5	1.6
5					1.9	1.8	2.1	2.6	2.3	2.0	1.4	1.6
6				2.3	1.9	1.8	2.0	2.6	2.3	2.0	1.4	1.6
7				2.3	2.0	1.8	2.0	2.7	2.3	2.0	1.4	1.7
8				2.3	1.9	1.8	2.0	2.7	2.4	2.2	1.4	1.7
9				2.5	2.0	1.7	2.0	2.6	2.5	2.2	1.5	1.6
10				2.4	2.0	1.8	2.1	2.6	2.8	2.1	1.5	1.6
11				2.3	2.0	1.8	2.2	2.5	2.8	2.0	1.6	1.6
12				2.3	1.9	1.8	2.4	2.4	2.7	2.0	1.6	1.6
13				2.3	1.8	1.9	2.6	2.3	2.6	1.9	1.6	1.6
14				2.3	1.8	1.9	2.8	2.3	2.5	1.8	1.5	1.6
15				2.5	1.8	3.0	3.0	2.4	2.5	1.7	1.5	1.6
16				2.4	1.8	2.9	2.9	2.5	2.5	1.7	1.6	1.6
17				2.3	1.8	3.0	2.8	2.4	2.4	1.6	1.6	1.6
18				2.3	1.8	2.6	2.8	2.5	2.4	1.7	1.6	1.6
19				2.3	1.8	2.5	2.9	2.6	2.4	1.7	1.6	1.6
20				2.5	1.8	2.4	3.0	2.6	2.5	1.7	1.7	1.6
21				2.4	1.8	2.3	2.9	2.5	2.4	1.6	1.6	1.6
22				2.4	1.8	2.4	2.9	2.4	2.4	1.6	1.6	1.6
23				2.3	1.8	2.2	2.8	2.4	2.4	1.6	1.6	1.6
24				2.3	1.8	2.2	3.0	2.5	2.5	1.8	1.5	1.6
25				2.2	1.8	2.5	2.8	2.5	2.4	1.7	1.5	1.6
26				2.1	1.8	2.3	2.7	2.5	2.3	1.6	1.5	1.6
27				2.0	1.9	2.3	2.7	2.4	2.3	1.6	1.6	1.6
28				2.0	2.0	2.0	2.6	2.4	2.3	1.6	1.6	1.6
29				2.0	2.1	2.2	2.8	2.4	2.5	1.5	1.6	1.6
30				2.0		2.1	2.8	2.4	2.3	1.5	1.6	1.6
31				1.8		2.0		2.4		1.5	1.6	

Daily gage height, in feet, of Rogue River near Prospect, Oreg., for 1907-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		1.5	1.7	2.0	2.0	2.2	2.1	2.5	2.8	1.7	1.4	1.5
2.....		1.5	1.6	2.0	2.0	2.2	2.2	2.6	2.9	1.7	1.5	1.5
3.....		1.5	1.6	2.1	2.0	2.1	2.2	2.8	2.9	1.6	1.5	1.5
4.....	1.5	1.4	1.6	2.2	2.0	2.1	2.1	2.8	2.9	1.6	1.6	1.5
5.....	1.5	1.4	1.6	2.5	2.1	2.0	2.1	2.7	2.8	1.7	1.6	1.5
6.....	1.5	1.4	1.5	2.9	2.1	2.0	2.0	2.7	2.7	1.8	1.6	1.5
7.....	1.5	1.4	1.5	2.9	2.1	2.0	2.0	2.7	2.6	2.0	1.7	1.6
8.....	1.4	1.5	1.5	2.8	2.1	2.0	2.0	2.6	2.5	1.9	1.7	1.6
9.....	1.4	1.5	1.4	2.6	2.0	1.9	2.1	2.6	2.4	1.8	1.7	1.6
10.....	1.4	1.5	1.4	2.4	1.9	1.8	2.1	2.6	2.4	1.8	1.7	1.6
11.....	1.4	1.6	1.5	2.0	1.9	1.8	2.1	2.5	2.3	1.7	1.7	1.6
12.....	1.5	1.6	1.6	2.0	1.9	1.9	2.1	2.5	2.3	1.7	1.7	1.6
13.....	1.6	1.6	1.6	2.1	1.8	1.9	2.2	2.4	2.3	1.7	1.6	1.7
14.....	3.0	1.6	1.5	2.2	1.9	2.0	2.2	2.2	2.3	1.6	1.6	1.7
15.....	2.6	1.6	1.5	2.4	2.0	2.1	2.2	2.1	2.2	1.6	1.6	1.7
16.....	2.5	1.7	1.5	3.8	2.5	2.1	2.1	2.1	2.2	1.6	1.6	1.7
17.....	2.4	1.7	1.5	3.6	3.0	2.2	2.1	2.1	2.2	1.6	1.6	1.6
18.....	2.4	1.7	1.5	3.4	2.8	2.2	2.1	2.1	2.1	1.6	1.7	1.6
19.....	2.3	1.7	1.5	3.9	2.5	2.2	2.2	2.1	2.1	1.5	1.7	1.6
20.....	2.1	2.1	1.5	4.5	2.4	2.2	2.2	2.0	2.0	1.5	1.6	1.6
21.....	2.0	2.2	1.6	4.9	2.2	2.1	2.2	2.0	2.0	1.5	1.6	1.6
22.....	1.8	2.3	1.6	3.9	2.0	2.0	2.3	2.0	2.0	1.5	1.6	1.7
23.....	1.7	2.3	1.7	3.0	2.0	2.0	2.3	2.0	1.9	1.4	1.6	1.7
24.....	1.6	2.2	1.7	2.8	2.0	2.0	2.3	2.1	1.9	1.4	1.6	1.7
25.....	1.5	2.2	1.8	2.6	2.1	2.0	2.3	2.1	1.9	1.4	1.6	1.7
26.....	1.5	2.1	1.9	2.5	2.1	2.1	2.4	2.2	1.8	1.4	1.5	1.7
27.....	1.5	2.0	1.9	2.4	2.1	2.1	2.4	2.4	1.8	1.4	1.5	1.7
28.....	1.5	1.8	1.9	2.1	2.1	2.1	2.5	2.5	1.8	1.4	1.5	1.7
29.....	1.5	1.7	2.0	2.1		2.2	2.5	2.6	1.8	1.4	1.5	1.8
30.....	1.6	1.7	2.0	2.0		2.2	2.5	2.6	1.7	1.4	1.5	1.8
31.....	1.6		2.0	2.0		2.1		2.7		1.4	1.5	
1909-10.												
1.....	1.8	2.0		2.0	1.6	2.4	1.6	2.0	1.6	1.3	1.0	.9
2.....	1.8	2.0		1.8	1.6	2.6	1.6	2.0	1.5	1.3	1.0	.9
3.....	1.8	1.9		1.7	1.5	3.0	1.7	2.0	1.5	1.3	.9	.9
4.....	1.7	1.9		1.6	1.5	3.0	1.7	1.9	1.5	1.3	.9	.9
5.....	1.7	2.1		1.4	1.5	2.5	1.8	1.9	1.5	1.2	.9	1.0
6.....	1.7	1.9		1.4	1.5	2.4	1.8	1.8	1.5	1.2	.9	1.0
7.....	1.6	1.8		1.6	1.6	2.4	2.0	1.8	1.6	1.2	.9	1.0
8.....	1.6	1.9		1.6	1.6	2.3	2.0	1.8	1.6	1.2	1.0	1.0
9.....	1.6	1.9		1.5	1.6	2.2	2.0	1.8	1.6	1.2	1.0	1.0
10.....	1.6	2.0	2.2	1.5	1.6	2.1	2.0	1.9	1.6	1.2	1.0	1.0
11.....	1.7	2.1	2.3	1.4	1.6	2.1	2.0	1.9	1.7	1.1	1.0	1.0
12.....	1.7	2.2	2.8	1.4	1.6	2.1	1.9	2.0	1.7	1.1	1.0	1.0
13.....	1.7	2.1	2.9	1.4	1.6	2.1	1.9	2.0	1.6	1.0	1.0	1.0
14.....	1.7	2.0	2.6	1.4	1.5	2.0	1.9	2.1	1.6	1.0	1.0	1.0
15.....	1.8	1.8	2.4	1.4	1.6	2.0	2.0	2.1	1.5	1.0	1.0	1.0
16.....	1.8	1.7	2.3	1.5	1.7	1.9	2.0	2.1	1.5	1.0	1.0	1.0
17.....	1.7	1.7	2.1	1.5	1.7	1.9	2.0	2.0	1.4	1.0	1.0	1.0
18.....	1.6	1.7	2.0	1.5	1.7	1.9	2.1	2.0	1.4	1.0	1.0	1.0
19.....	1.6	2.4	2.0	1.5	1.8	1.9	2.1	2.0	1.4	1.0	1.0	1.4
20.....	1.7	5.2	2.0	1.6	1.8	1.9	2.1	1.9	1.4	1.0	1.0	1.5
21.....	1.8	4.0	1.8	1.7	1.8	1.8	2.0	1.9	1.4	1.0	1.0	1.4
22.....	1.9	7.0	1.8	1.8	1.9	1.8	2.0	1.9	1.4	1.0	1.0	1.3
23.....	1.8		1.6	1.8	2.0	1.8	2.0	1.9	1.4	1.0	1.1	1.2
24.....	1.7		1.6	1.8	2.0	1.7	2.0	1.8	1.3	1.0	1.1	1.0
25.....	1.7		1.8	1.8	1.9	1.7	2.0	1.8	1.3	1.0	1.1	1.0
26.....	1.6		1.8	1.7	1.9	1.7	2.0	1.7	1.3	1.0	1.1	1.0
27.....	1.6		1.7	1.7	1.9	1.7	2.0	1.6	1.3	1.0	1.1	1.0
28.....	1.7		1.6	1.8	2.0	1.7	2.1	1.6	1.3	1.0	1.0	1.1
29.....	1.7		1.5	1.8		1.7	2.2	1.6	1.3	1.0	1.0	1.1
30.....	1.7		1.4	1.7		1.6	2.1	1.6	1.3	1.0	1.0	1.2
31.....	1.8		1.4	1.7		1.6		1.6		1.0	.9	

NOTE.—No ice at this station. Gage washed out Nov. 23 and replaced Dec. 10, 1909.

Daily discharge, in second-feet, of Rogue River near Prospect, Oreg., for 1907-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1907.				1907.				1907.			
1.....		539	602	11.....		584	429	21.....	620	474	422
2.....		539	466	12.....		548	422	22.....	620	474	415
3.....		530	450	13.....		530	415	23.....	620	466	415
4.....		530	450	14.....		514	415	24.....	602	620	415
5.....		530	450	15.....		514	415	25.....	593	530	415
6.....		530	443	16.....		506	466	26.....	584	498	415
7.....		522	443	17.....	653	498	490	27.....	575	482	415
8.....		642	436	18.....	642	490	450	28.....	575	474	450
9.....		980	436	19.....	620	490	436	29.....	566	466	436
10.....		620	429	20.....	620	482	422	30.....	557	458	436
								31.....	548	458	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....					550	820	1,340	1,010	910	400	440	
2.....	436				610	820	670	1,340	1,010	820	400	440
3.....	422				550	670	670	1,460	1,010	670	400	440
4.....	415				550	610	670	1,340	1,010	670	400	440
5.....	408				610	550	740	1,220	910	670	360	440
6.....		394		910	610	550	670	1,220	910	670	360	440
7.....		429		910	670	550	670	1,340	910	670	360	490
8.....		374		910	610	550	670	1,340	1,010	820	369	490
9.....		364		1,110	670	490	670	1,220	1,110	820	400	440
10.....		358		1,010	670	550	740	1,220	1,460	740	400	440
11.....				910	670	550	820	1,110	1,460	670	440	440
12.....				910	610	550	1,010	1,010	1,340	670	440	440
13.....				910	550	610	1,220	910	1,220	610	440	440
14.....				910	550	610	1,460	910	1,110	550	400	440
15.....				1,110	550	1,700	1,700	1,010	1,110	490	400	440
16.....				1,010	550	1,580	1,580	1,110	1,110	490	440	440
17.....				910	550	1,700	1,460	1,010	1,010	440	440	440
18.....				910	550	1,220	1,460	1,110	1,010	490	440	440
19.....				910	550	1,100	1,580	1,220	1,010	490	440	440
20.....				1,110	550	1,010	1,700	1,220	1,110	490	490	440
21.....				1,010	550	910	1,580	1,110	1,010	440	440	440
22.....				1,010	550	1,010	1,580	1,010	1,010	440	440	440
23.....				910	550	820	1,460	1,010	1,010	440	440	440
24.....				910	550	820	1,700	1,110	1,110	550	400	440
25.....				820	550	1,110	1,460	1,110	1,010	490	400	440
26.....				740	550	910	1,340	1,110	910	440	400	440
27.....				670	610	910	1,340	1,010	910	440	440	440
28.....				670	670	670	1,220	1,010	910	440	440	440
29.....				670	740	820	1,460	1,010	1,110	400	440	440
30.....				670		740	1,460	1,010	910	400	440	440
31.....				550		670		1,010		400	440	.....

Daily discharge, in second-feet, of Rogue River near Prospect, Ore., for 1907-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.	430	400	490	670	670	820	740	1,110	1,460	490	360	400
2.	420	400	440	670	670	820	820	1,220	1,580	490	400	400
3.	410	400	440	740	670	740	820	1,460	1,580	440	400	400
4.	400	360	440	820	670	740	740	1,460	1,580	440	440	400
5.	400	360	440	1,110	740	670	740	1,340	1,460	490	440	400
6.	400	360	400	1,580	740	670	670	1,340	1,340	550	440	400
7.	400	360	400	1,580	740	670	670	1,340	1,220	670	490	440
8.	360	400	400	1,460	740	670	670	1,220	1,110	610	490	440
9.	360	400	360	1,220	670	610	740	1,220	1,010	550	490	440
10.	360	400	360	1,010	610	550	740	1,220	1,010	550	490	440
11.	360	440	400	670	610	550	740	1,110	910	490	490	440
12.	400	440	440	670	610	610	740	1,110	910	490	490	440
13.	440	440	440	740	550	610	820	1,010	910	490	440	490
14.	1,700	440	400	820	610	670	820	820	910	440	440	490
15.	1,220	440	400	1,010	670	740	820	740	820	440	440	490
16.	1,110	490	400	.....	1,110	740	740	740	820	440	440	490
17.	1,010	490	400	.....	1,700	820	740	740	820	440	440	440
18.	1,010	490	400	.....	1,460	820	740	740	740	440	490	440
19.	910	490	400	.....	1,110	820	820	740	740	400	490	440
20.	740	740	400	.....	1,010	820	820	670	670	400	440	440
21.	670	820	440	.....	820	740	820	670	670	400	440	440
22.	550	910	440	.....	670	670	910	670	670	400	440	490
23.	490	910	490	1,700	670	670	910	670	610	360	440	490
24.	440	820	490	1,460	670	670	910	740	610	360	440	490
25.	400	820	550	1,220	740	670	910	740	610	360	440	490
26.	400	740	610	1,110	740	740	1,010	820	550	360	400	490
27.	400	670	610	1,010	740	740	1,010	1,010	550	360	400	490
28.	400	550	610	740	740	740	1,110	1,110	550	360	400	490
29.	400	490	670	740	.....	820	1,110	1,220	550	360	400	550
30.	440	490	670	670	.....	820	1,110	1,220	490	360	400	550
31.	440	.....	670	670	.....	740	.....	1,340	.....	360	400	.....
1909-10.												
1.	550	670	.....	1,290	880	1,790	880	1,290	880	635	465	420
2.	550	670	.....	1,080	880	2,100	880	1,290	790	635	465	420
3.	550	610	.....	975	790	2,760	975	1,290	790	635	420	420
4.	490	610	.....	880	790	2,760	975	1,180	790	635	420	420
5.	490	740	.....	710	790	1,940	1,080	1,180	790	570	420	465
6.	490	610	.....	710	790	1,790	1,080	1,080	790	570	420	465
7.	440	550	.....	880	880	1,790	1,290	1,080	880	570	420	465
8.	440	610	.....	880	880	1,650	1,290	1,080	880	570	465	465
9.	440	610	.....	790	880	1,520	1,290	1,080	880	570	465	465
10.	440	670	1,520	790	880	1,400	1,290	1,180	880	570	465	465
11.	490	740	1,650	710	880	1,400	1,290	1,180	975	515	465	465
12.	490	820	2,420	710	880	1,400	1,180	1,290	975	515	465	465
13.	490	740	2,590	710	880	1,400	1,180	1,290	880	465	465	465
14.	490	670	2,100	710	790	1,290	1,180	1,400	880	465	465	465
15.	550	550	1,790	710	880	1,290	1,290	1,400	790	465	465	465
16.	550	490	1,650	790	975	1,180	1,290	1,400	790	465	465	465
17.	490	490	1,400	790	975	1,180	1,290	1,290	710	465	465	465
18.	440	490	1,290	790	975	1,180	1,400	1,290	710	465	465	465
19.	440	1,010	1,290	790	1,080	1,180	1,400	1,290	710	465	465	710
20.	490	.....	1,290	880	1,080	1,180	1,400	1,180	710	465	465	790
21.	550	.....	1,080	975	1,080	1,080	1,290	1,180	710	465	465	710
22.	610	.....	1,080	1,080	1,180	1,080	1,290	1,180	710	465	465	635
23.	550	.....	880	1,080	1,290	1,080	1,290	1,180	710	465	515	570
24.	490	.....	880	1,080	1,290	975	1,290	1,080	635	465	515	465
25.	490	.....	1,080	1,080	1,180	975	1,290	1,080	635	465	515	465
26.	440	.....	1,080	975	1,180	975	1,290	975	635	465	515	465
27.	440	.....	975	975	1,180	975	1,290	880	635	465	515	465
28.	490	.....	880	1,080	1,290	975	1,400	880	635	465	465	515
29.	490	.....	790	1,080	.....	975	1,520	880	635	465	465	515
30.	490	.....	710	975	.....	880	1,400	880	635	465	465	570
31.	550	.....	710	975	.....	880	.....	880	.....	465	420	.....

NOTE.—Daily discharge determined as follows: 1907, from fairly well defined rating curve; Oct. 1-3, 1908, interpolated; Jan. 1 to Nov. 22, 1909, from poorly defined curve; no estimate of high-water discharge January and November, 1909; Dec. 10, 1909, to Sept. 30, 1910, from curve well defined between 400 and 1,500 second-feet.

Monthly discharge of Rogue River near Prospect, Oreg., for 1907-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
July 17-31.....	653	548	600	17,900	B.
August.....	980	458	533	32,800	B.
September.....	602	415	440	26,200	B.
The period.....				76,900	
1907-8.					
October 1-10.....	436	358	398	7,890	B.
January 6-31.....	1,110	550	888	45,800	C.
February.....	740	550	590	33,900	C.
March.....	1,700	490	845	52,000	C.
April.....	1,700	670	1,180	70,200	C.
May.....	1,460	910	1,130	69,500	C.
June.....	1,460	910	1,060	63,100	C.
July.....	910	400	572	35,200	C.
August.....	490	360	417	25,600	C.
September.....	490	440	443	26,400	C.
1908-9.					
October.....	1,700	360	576	35,400	C.
November.....	910	360	532	31,700	C.
December.....	670	360	468	28,800	C.
February.....	1,700	550	791	43,900	C.
March.....	820	550	715	44,000	C.
April.....	1,110	670	832	49,500	C.
May.....	1,460	670	1,020	62,700	C.
June.....	1,580	490	915	54,400	C.
July.....	670	360	445	27,400	C.
August.....	490	360	440	27,100	C.
September.....	550	400	458	27,300	C.
1909-10.					
October.....	610	440	496	30,500	C.
November 1-19.....	1,010	490	650	24,500	C.
December 10-31.....	2,590	710	1,320	57,600	B.
January.....	1,290	710	901	55,400	B.
February.....	1,290	790	982	54,500	B.
March.....	2,760	880	1,390	85,500	B.
April.....	1,520	830	1,240	73,800	B.
May.....	1,400	880	1,160	71,300	B.
June.....	975	635	768	45,700	A.
July.....	635	465	510	31,400	A.
August.....	515	420	464	28,500	A.
September.....	790	420	502	29,900	A.

ROGUE RIVER NEAR TOLO, OREG.

Location.—In sec. 18, T. 36 S., R. 2 W., at Gold Ray, just below the dam and power house of the Rogue River Electric Co., 7 miles above Gold Hill, 9 miles below Medford, 1¼ miles below Tolo, and about one-half mile below the mouth of Bear Creek.

Records presented.—August 30, 1905, to September 30, 1910.

Drainage area.—2,020 square miles.

Gage.—Vertical staff bolted to concrete pier of highway bridge.

Channel.—Rock and boulders; practically permanent. One channel at all stages.

Discharge measurements.—Made from cable 300 feet below gage.

Accuracy.—Records fair. Gage heights subject to fluctuation caused by operation of power plant. Rating curve good.

Cooperation.—Gage-height record furnished by California-Oregon Power Co. (formerly the Rogue River Electric Co.).

Discharge measurements of Rogue River near Tolo, Oreg., in 1905-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
Aug. 30	L. R. Allen	1.10	1,310	May 25	J. C. Stevens	2.98	4,150
Oct. 17	do	1.20	1,210	Sept. 13	C. E. Ellsworth	.82	1,530
Dec. 26	do	1.57	1,510	Nov. 2	do	.95	1,900
1906.				1908.			
Jan. 29	L. R. Allen	2.51	2,920	Feb. 10	C. E. Ellsworth	3.15	4,410
Mar. 19	do	2.33	2,670	May 13	do	2.50	3,190
Apr. 30	do	3.24	4,570	Sept. 11	H. Kimble	1.20	1,340
May 31	do	3.72	5,360	Nov. 14	H. D. McGlashan	1.00	1,490
July 12	do	1.64	1,800	Dec. 29	H. Kimble	2.50	3,480
Sept. 12	I. E. Oakes	1.06	1,350				
1907.				1910.			
Mar. 5	I. E. Oakes	3.20	4,200	Aug. 18	Heintzleman and Ebert	.99	1,340
				29	F. C. Ebert	.98	1,310

Daily gage height, in feet, of Rogue River near Tolo, Oreg., for 1905-1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1905.		1905.		1905.	
1	1.1	11	1.1	21	1.05
2	1.1	12	1.15	22	1.1
3	1.1	13	1.15	23	1.1
4	1.15	14	1.15	24	1.1
5	1.15	15	1.1	25	1.15
6	1.12	16	1.1	26	1.15
7	1.1	17	1.2	27	1.17
8	1.1	18	1.1	28	1.3
9	1.1	19	1.1	29	1.2
10	1.6	20	1.05	30	1.2
				31	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	1.2	1.2	1.32	1.5	2.65	3.6	3.1	3.8	2.1	1.6	1.05	1.05
2	1.17	1.2	1.3	1.38	2.6	3.15	3.7	3.2	3.7	2.5	1.6	1.05
3	1.15	1.2	1.3	1.4	2.55	2.9	3.5	3.1	3.6	2.5	1.5	1.05
4	1.15	1.2	1.27	1.48	2.4	2.85	3.3	3.2	3.6	2.5	1.5	1.1
5	1.17	1.2	1.45	1.45	2.35	2.75	3.3	3.3	3.4	2.6	1.3	1.1
6	1.3	1.2	1.32	1.4	2.3	2.75	3.4	3.2	3.3	2.5	1.3	1.1
7	1.45	1.2	1.35	1.4	2.25	2.9	3.4	3.2	3.3	2.4	1.3	1.1
8	1.6	1.2	1.35	1.5	2.2	2.95	3.3	3.1	3.2	2.4	1.3	1.1
9	1.35	1.2	1.3	1.7	2.18	3.0	3.4	3.2	3.7	2.4	1.2	1.1
10	1.25	1.2	1.3	2.05	2.1	3.0	3.2	3.4	3.5	2.3	1.3	1.1
11	1.2	1.2	1.2	1.9	2.1	3.1	3.0	3.3	3.3	2.4	1.2	1.1
12	1.2	1.2	1.2	2.25	2.05	3.15	3.0	3.1	3.3	2.3	1.2	1.1
13	1.2	1.2	1.2	3.2	2.0	3.0	2.9	2.9	3.2	2.2	1.25	1.2
14	1.17	1.2	1.3	2.78	1.95	3.0	3.0	3.0	3.1	2.2	1.3	1.4
15	1.2	1.2	1.3	2.65	2.3	2.8	2.9	3.2	2.9	2.3	1.2	1.5
16	1.22	1.2	1.32	11.4	2.25	2.7	3.1	2.9	3.0	2.3	1.25	1.45
17	1.25	1.22	1.32	4.4	2.25	2.6	2.9	3.0	2.9	2.2	1.2	1.25
18	1.25	1.3	1.4	4.0	2.82	2.5	2.9	2.8	2.8	2.2	1.2	1.2
19	1.25	1.3	1.45	3.5	4.5	2.4	3.0	2.7	2.8	2.1	1.2	1.2
20	1.25	1.5	1.47	2.8	4.4	2.5	3.2	2.75	2.1	1.2	1.2	1.2
21	1.25	1.3	1.4	2.4	4.7	2.8	3.4	2.7	2.7	2.2	1.2	1.2
22	1.25	1.25	1.35	2.25	4.5	3.1	3.0	3.0	2.6	2.1	1.2	1.15
23	1.2	1.25	1.17	3.75	4.4	2.8	3.5	2.9	2.5	2.0	1.2	1.1
24	1.2	1.22	1.25	3.85	4.0	2.7	3.3	2.7	2.4	2.0	1.2	1.1
25	1.2	1.2	1.32	3.7	3.7	3.0	3.4	2.6	2.3	2.0	1.2	1.1
26	1.37	1.2	1.6	3.25	3.8	3.5	3.0	2.7	2.35	1.9	1.2	1.1
27	1.35	1.3	1.82	2.95	4.6	3.1	3.2	2.4	1.9	1.2	1.2	1.1
28	1.3	1.3	1.65	2.75	3.9	3.0	3.3	3.8	2.3	1.7	1.2	1.1
29	1.35	1.4	1.5	2.55	4.4	2.8	3.2	4.7	2.3	1.8	1.2	1.1
30	1.3	1.3	1.6	2.5	4.4	2.9	3.1	4.4	2.2	1.7	1.05	1.1
31	1.22		1.52	2.7	4.4	5.1		3.9		1.7	1.1	

Daily gage height, in feet, of Rogue River near Tolo, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	1.1	1.2	1.45	2.75	6.65	3.65	3.95	3.2	2.7	2.4	1.3	1.3
2.....	1.1	1.2	1.5	2.6	9.55	3.45	4.05	3.1	2.65	2.3	1.3	1.3
3.....	1.1	1.3	1.4	4.8	16.0	3.35	3.9	3.0	2.7	2.3	1.2	1.4
4.....	1.1	1.55	1.4	12.25	17.0	3.3	3.65	2.85	2.6	2.3	1.3	1.3
5.....	1.1	1.7	1.4	4.75	15.0	3.2	3.8	2.8	2.7	2.2	1.3	1.3
6.....	1.1	1.75	1.55	3.7	9.65	3.1	8.25	2.8	2.7	2.2	1.3	1.3
7.....	1.1	2.0	1.7	3.45	7.25	3.0	7.5	2.75	2.7	2.2	1.4	1.3
8.....	1.1	1.95	2.75	3.1	6.45	3.05	6.25	2.7	2.7	2.3	1.3	1.2
9.....	1.1	1.8	2.15	2.6	5.25	3.0	5.8	2.7	2.7	2.3	1.6	1.2
10.....	1.1	1.65	2.1	2.55	5.25	3.0	6.0	2.75	2.7	2.2	1.4	1.1
11.....	1.1	1.35	2.05	2.4	5.1	3.1	5.8	2.75	2.65	1.85	1.3	1.1
12.....	1.1	1.3	2.1	2.35	4.4	3.1	5.45	2.9	2.6	1.8	1.3	.9
13.....	1.1	1.35	2.2	2.25	4.4	2.95	5.4	2.8	2.6	1.8	1.5	.9
14.....	1.1	1.4	2.0	2.3	4.25	2.85	5.25	2.75	2.6	1.7	1.55	1.1
15.....	1.2	1.45	2.2	2.15	4.15	2.8	5.1	2.7	2.65	1.8	1.5	.8
16.....	1.35	2.1	2.7	2.1	4.05	2.8	4.7	2.7	2.6	1.7	1.35	.8
17.....	1.5	2.15	2.25	2.1	3.7	3.0	4.45	2.6	2.55	1.7	1.3	1.1
18.....	1.5	2.05	2.15	2.05	3.4	13.25	4.25	2.6	2.6	1.6	1.3	1.1
19.....	1.35	1.7	2.2	2.0	3.5	7.75	4.3	2.75	2.5	1.6	1.3	.8
20.....	1.2	1.5	2.45	1.95	3.4	8.75	4.15	2.75	2.5	1.6	1.1	.8
21.....	1.2	1.65	2.4	1.95	3.45	7.25	4.1	2.65	2.5	1.7	1.1	.8
22.....	1.2	1.7	2.2	1.9	3.95	6.65	4.1	2.75	2.55	1.7	1.2	.8
23.....	1.2	1.55	2.25	1.95	4.4	6.1	4.05	2.8	2.5	1.55	1.3	.8
24.....	1.25	1.4	2.4	2.05	4.75	5.3	4.0	2.8	2.5	1.45	1.35	.9
25.....	1.3	1.4	3.5	2.2	4.5	4.75	3.85	2.8	2.45	1.4	1.3	.8
26.....	1.35	1.35	4.75	2.6	4.3	4.25	3.75	2.75	2.5	1.4	1.2	.9
27.....	1.3	1.4	3.4	2.9	3.95	4.2	3.55	2.7	2.4	1.3	1.2	.8
28.....	1.2	1.35	2.95	3.8	3.55	4.1	3.4	2.7	2.4	1.3	1.2	.8
29.....	1.2	1.35	2.95	5.2	.....	4.0	3.3	2.75	2.4	1.2	1.2	.8
30.....	1.2	1.35	3.15	4.6	.....	3.9	3.2	2.8	2.4	1.3	1.1	.8
31.....	1.2	.....	2.9	4.8	.....	4.0	.....	2.75	.....	1.3	1.2	.....
1907-8.												
1.....	.9	.9	1.05	3.9	2.4	2.5	2.4	3.5	2.55	2.3	1.3	1.0
2.....	.9	.9	1.1	3.5	2.4	2.5	2.4	3.5	2.5	2.3	1.25	1.0
3.....	.8	.9	1.1	3.45	2.35	2.5	2.45	3.5	2.45	2.3	1.2	.95
4.....	.9	.9	1.1	3.45	2.3	2.5	2.5	3.4	2.4	2.3	1.2	.95
5.....	.9	.85	1.1	3.15	2.35	2.4	2.4	3.3	2.4	2.25	1.2	.9
6.....	.8	.8	1.05	3.0	3.8	2.4	2.4	3.05	2.4	2.15	1.15	.9
7.....	.8	.8	1.0	3.0	3.85	2.3	2.4	3.0	2.4	2.0	1.1	.9
8.....	.8	.8	2.55	3.1	3.6	2.25	2.3	2.95	2.5	1.9	1.0	.9
9.....	.8	.8	2.1	5.65	3.5	2.3	2.4	2.85	2.5	1.8	1.0	.9
10.....	.8	.8	2.1	4.75	3.3	2.2	2.4	2.9	2.85	1.8	1.0	.9
11.....	.8	.8	1.6	3.65	3.35	2.2	2.5	2.8	2.95	1.8	1.0	.9
12.....	.8	.8	3.0	3.5	3.25	2.3	2.5	2.8	2.95	1.8	1.0	.9
13.....	.8	.7	5.25	3.3	2.6	2.3	2.95	2.5	2.85	1.8	1.0	1.0
14.....	.8	.7	2.7	6.55	2.5	2.35	3.2	2.95	2.75	1.9	1.05	1.0
15.....	.7	.7	1.95	4.3	2.4	2.4	3.8	3.1	2.65	1.85	1.0	1.0
16.....	.7	.7	1.75	3.8	2.5	3.0	3.8	3.1	2.6	1.8	1.0	1.0
17.....	.7	.7	2.0	3.45	2.4	4.15	4.3	3.0	2.55	1.8	1.0	1.0
18.....	.7	.8	1.75	3.3	2.4	3.9	3.95	3.5	2.5	1.8	1.0	1.0
19.....	.7	.8	1.65	3.2	2.4	3.4	3.9	3.55	2.5	1.7	1.0	1.0
20.....	.6	.8	2.0	5.55	2.3	3.2	4.05	3.45	2.4	1.7	1.0	1.0
21.....	.8	1.1	2.05	4.25	2.3	3.1	3.95	3.25	2.95	1.7	1.0	1.0
22.....	.8	1.0	7.0	3.6	2.3	3.0	3.9	3.2	2.75	1.65	.9	1.0
23.....	.8	1.2	5.65	3.2	2.1	2.25	3.8	3.05	2.6	1.6	.9	1.0
24.....	.6	1.0	7.25	3.7	2.2	2.2	4.05	3.0	2.5	1.5	.9	1.0
25.....	.7	1.5	4.1	3.2	2.2	2.35	3.85	3.0	2.5	1.5	.9	1.0
26.....	.7	1.2	11.6	3.1	2.1	2.6	3.75	2.95	2.5	1.5	1.0	1.0
27.....	.8	1.2	8.0	3.0	2.25	2.6	3.6	2.9	2.4	1.45	1.0	1.0
28.....	.8	1.1	3.45	2.6	2.3	2.5	3.5	2.85	2.4	1.4	1.0	1.0
29.....	.8	1.0	4.7	2.5	2.4	2.45	3.5	2.8	2.3	1.3	1.0	1.0
30.....	1.1	1.0	4.0	2.5	.....	2.4	3.5	2.8	2.3	1.3	1.1	1.0
31.....	1.2	.....	4.1	2.4	.....	2.5	.....	2.7	.....	1.3	1.0	.....

Daily gage height, in feet, of Rogue River near Tolo, Oreg., for 1905-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	1.05	1.2	1.55	1.5	3.15	3.6	2.4	2.7	2.9	1.25	1.2	0.9
2.....	1.05	1.2	1.5	1.5	2.95	3.4	2.4	2.75	3.1	1.2	1.2	.9
3.....	1.1	1.2	1.5	1.75	4.25	3.4	2.4	3.05	3.1	1.2	1.1	.9
4.....	1.1	1.2	1.5	3.4	4.1	3.75	2.5	3.3	3.0	1.3	1.1	.9
5.....	1.05	1.2	1.5	8.85	4.05	3.55	2.5	3.2	2.8	1.45	1.0	.9
6.....	1.05	1.2	1.5	6.65	3.65	3.3	2.4	2.95	2.65	1.6	1.0	.9
7.....	1.05	1.1	1.45	7.8	3.85	3.2	2.45	2.85	2.6	1.75	1.0	.9
8.....	1.0	1.1	1.3	10.6	3.6	3.1	2.4	2.8	2.45	1.8	1.0	.9
9.....	1.0	1.1	1.3	5.95	3.65	3.1	2.4	2.8	2.3	1.75	1.0	.9
10.....	1.0	1.1	1.2	4.5	3.85	3.05	2.4	2.65	2.2	1.65	1.0	.9
11.....	1.0	1.1	1.2	4.3	3.8	3.0	2.5	2.55	2.2	1.6	1.0	.95
12.....	1.1	1.1	1.2	3.75	3.75	2.9	2.5	2.4	2.35	1.6	1.0	1.0
13.....	1.1	1.1	1.2	3.7	4.25	2.7	2.5	2.4	2.15	1.45	1.0	1.0
14.....	1.85	1.1	1.2	5.35	4.0	2.65	2.5	2.35	1.85	1.4	1.0	1.0
15.....	2.8	1.1	1.2	7.1	3.95	2.5	2.6	2.4	1.9	1.3	1.0	1.0
16.....	2.7	1.1	1.2	11.7	4.1	2.5	2.7	2.35	2.2	1.2	1.0	1.0
17.....	1.85	1.1	1.2	7.75	6.3	2.5	2.7	2.25	2.25	1.2	.9	1.0
18.....	1.75	1.1	1.2	7.65	5.85	2.55	2.7	2.15	2.2	1.2	.9	1.0
19.....	1.5	2.4	1.2	7.9	5.85	2.8	2.8	2.1	2.1	1.2	.85	1.1
20.....	1.5	3.35	1.2	11.25	5.9	2.9	2.8	2.0	2.1	1.2	.8	1.1
21.....	1.5	3.15	1.2	10.5	5.0	2.85	2.6	1.95	2.1	1.3	.8	1.1
22.....	1.5	4.2	1.2	9.0	4.3	2.8	2.55	1.9	2.1	1.3	.8	1.0
23.....	1.5	3.4	1.2	6.5	4.0	2.6	2.5	1.85	2.05	1.3	.8	1.0
24.....	1.35	2.75	1.65	5.45	4.35	2.6	2.5	1.9	1.95	1.2	.9	1.0
25.....	1.35	3.1	1.9	5.0	4.45	2.6	2.6	1.95	1.85	1.25	.9	1.0
26.....	1.3	2.7	1.65	4.4	4.15	2.45	2.55	2.05	1.75	1.35	.9	1.1
27.....	1.25	2.6	1.7	4.05	3.9	2.4	2.55	2.2	1.7	1.3	.9	1.1
28.....	1.2	2.0	2.15	3.75	3.8	2.4	3.0	2.9	1.65	1.25	.9	1.1
29.....	1.2	1.75	2.7	3.6	.....	2.4	2.95	2.75	1.55	1.2	.9	1.1
30.....	1.2	1.65	2.5	3.65	.....	2.45	2.9	2.65	1.45	1.2	.9	1.1
31.....	1.2	.....	2.05	3.5	.....	2.4	.....	2.7	.....	1.2	.9	.....
1909-10.												
1.....	1.1	2.4	5.2	2.95	4.1	7.85	2.6	2.8	2.1	1.5	1.05	.8
2.....	1.1	2.15	4.8	2.8	3.55	7.45	2.65	2.8	2.1	1.5	1.0	.8
3.....	1.1	1.75	4.15	2.65	3.3	6.15	2.4	2.75	2.1	1.5	1.0	.8
4.....	1.1	1.5	4.0	2.35	3.2	5.65	2.4	2.65	2.1	1.5	1.0	.8
5.....	1.1	1.55	3.9	2.25	3.1	5.05	2.4	2.6	2.1	1.5	1.1	.8
6.....	1.1	1.65	4.0	2.2	3.0	4.6	2.4	2.55	2.1	1.5	1.1	.8
7.....	1.1	1.6	4.0	2.2	2.9	4.3	2.3	2.45	2.05	1.5	1.1	.8
8.....	1.1	1.6	4.25	2.2	2.8	4.1	2.2	2.4	2.0	1.5	1.1	.8
9.....	1.1	1.65	7.05	2.2	2.7	4.0	2.2	2.3	1.9	1.5	1.1	.8
10.....	1.1	1.9	4.8	2.2	2.75	4.0	2.2	3.1	1.9	1.5	1.1	.8
11.....	1.05	1.9	4.35	2.15	2.65	3.95	2.2	3.05	1.9	1.4	1.1	.8
12.....	1.0	1.8	4.7	2.2	2.65	3.85	2.2	2.95	1.9	1.4	1.1	.8
13.....	1.0	1.75	5.05	2.15	2.6	3.95	2.1	2.6	1.9	1.4	1.1	.8
14.....	1.0	1.6	4.55	2.15	2.5	4.0	2.1	2.55	1.9	1.4	1.1	.8
15.....	1.0	1.5	4.15	2.2	2.4	4.0	2.1	2.5	1.9	1.4	1.1	.8
16.....	1.0	1.5	3.8	2.15	2.5	4.0	2.1	2.55	1.9	1.4	1.1	.8
17.....	1.0	1.5	3.5	2.1	2.65	3.8	2.25	2.4	1.9	1.4	1.1	.8
18.....	1.0	1.45	3.6	2.15	3.15	3.85	2.3	2.4	1.9	1.35	1.1	.8
19.....	1.0	2.05	3.25	2.3	4.85	4.0	2.6	2.4	1.9	1.3	1.1	.8
20.....	1.0	10.35	3.1	2.1	3.95	3.85	2.95	2.3	1.9	1.3	1.1	.85
21.....	1.0	8.5	2.95	2.1	3.2	3.85	2.8	2.3	1.9	1.25	1.1	.9
22.....	1.0	10.6	2.85	3.15	2.9	3.9	3.0	2.3	1.85	1.2	1.1	.85
23.....	1.0	17.0	2.65	3.75	3.0	4.85	3.0	2.3	1.8	1.2	1.1	.8
24.....	1.0	11.25	2.5	3.95	5.35	4.0	3.1	2.3	1.8	1.2	1.1	.8
25.....	1.0	7.8	2.45	3.45	6.1	3.65	2.95	2.3	1.8	1.1	1.1	.8
26.....	1.0	5.85	2.3	3.15	5.25	3.45	2.9	2.3	1.75	1.1	1.1	.8
27.....	1.0	5.15	2.3	3.1	4.7	3.05	2.85	2.3	1.6	1.1	1.1	.8
28.....	1.05	4.9	2.3	3.65	6.2	3.0	2.75	2.25	1.6	1.1	1.0	.8
29.....	1.1	4.55	2.3	4.1	.....	3.0	2.85	2.2	1.5	1.1	.95	.8
30.....	1.15	6.35	2.25	3.8	.....	2.7	2.95	2.2	1.5	1.1	.85	.8
31.....	1.25	.....	3.35	3.75	.....	2.6	.....	2.2	.....	1.1	.8	.....

NOTE.—No ice at this station.

Daily discharge, in second-feet, of Rogue River near Tolo, Oreg., for 1905-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1905.			1905.			1905.		
1		1,270	11		1,270	21		1,240
2		1,270	12		1,300	22		1,270
3		1,270	13		1,300	23		1,270
4		1,300	14		1,300	24		1,270
5		1,300	15		1,270	25		1,300
6		1,280	16		1,270	26		1,300
7		1,270	17		1,340	27		1,320
8		1,270	18		1,270	28		1,420
9		1,270	19		1,270	29		1,340
10		1,690	20		1,240	30	1,270	1,340
						31	1,270	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	1,340	1,340	1,440	1,590	3,190	5,090	7,060	4,030	5,540	2,300	1,690	1,230
2	1,320	1,340	1,420	1,480	3,100	4,130	5,310	4,230	5,310	2,930	1,690	1,230
3	1,300	1,340	1,420	1,500	3,010	3,640	4,870	4,030	5,090	2,930	1,590	1,230
4	1,300	1,340	1,400	1,570	2,760	3,550	4,440	4,230	5,090	2,930	1,590	1,270
5	1,320	1,340	1,540	1,540	2,680	3,370	4,440	4,440	4,650	3,100	1,420	1,270
6	1,420	1,340	1,440	1,500	2,600	3,370	4,650	4,230	4,440	2,930	1,420	1,270
7	1,540	1,340	1,460	1,500	2,520	3,640	4,650	4,230	4,440	2,760	1,420	1,270
8	1,690	1,340	1,460	1,590	2,450	3,730	4,440	4,030	4,230	2,760	1,420	1,270
9	1,460	1,340	1,420	1,800	2,420	3,830	4,650	4,230	5,310	2,760	1,340	1,270
10	1,380	1,340	1,420	2,230	2,300	3,830	4,230	4,650	4,870	2,600	1,420	1,270
11	1,340	1,340	1,340	2,030	2,300	4,030	3,830	4,440	4,440	2,760	1,340	1,270
12	1,340	1,340	1,340	2,520	2,230	4,130	3,830	4,030	4,440	2,600	1,340	1,270
13	1,340	1,340	1,340	4,230	2,160	3,830	3,640	3,640	4,230	2,450	1,380	1,340
14	1,320	1,340	1,420	3,420	2,090	3,830	3,830	3,830	4,030	2,450	1,420	1,500
15	1,340	1,340	1,420	3,190	2,600	3,460	3,640	4,230	3,640	2,600	1,340	1,590
16	1,360	1,340	1,440	27,800	2,520	3,280	4,030	3,640	3,830	2,600	1,380	1,540
17	1,380	1,360	1,440	6,980	2,520	3,100	3,640	3,830	3,640	2,450	1,340	1,380
18	1,380	1,420	1,500	6,000	3,500	2,930	3,640	3,460	3,460	2,450	1,340	1,340
19	1,380	1,420	1,540	4,870	7,230	2,760	3,830	3,280	3,460	2,300	1,340	1,340
20	1,380	1,590	1,560	3,460	6,980	2,930	4,230	3,280	3,370	2,300	1,340	1,340
21	1,360	1,420	1,500	2,760	7,750	3,460	4,650	3,280	3,280	2,450	1,340	1,340
22	1,380	1,380	1,460	2,520	7,230	4,030	4,760	3,830	3,100	2,300	1,340	1,300
23	1,340	1,380	1,320	5,420	6,980	3,460	4,870	3,640	2,930	2,160	1,340	1,270
24	1,340	1,360	1,380	5,650	6,000	3,280	4,440	3,280	2,760	2,160	1,340	1,270
25	1,340	1,340	1,440	5,310	5,310	3,830	4,650	3,100	2,600	2,160	1,340	1,270
26	1,480	1,340	1,690	4,330	5,540	4,870	3,830	3,280	2,680	2,030	1,340	1,270
27	1,460	1,420	1,930	3,730	7,490	4,030	4,230	4,410	2,760	2,030	1,340	1,270
28	1,420	1,420	1,740	3,370	5,770	3,830	4,440	5,540	2,600	1,800	1,340	1,270
29	1,460	1,600	1,590	3,010	-----	3,460	4,230	7,750	2,600	1,910	1,340	1,270
30	1,420	1,420	1,690	2,930	-----	3,640	4,030	6,980	2,450	1,800	1,230	1,270
31	1,360	-----	1,610	3,280	-----	8,810	-----	5,770	-----	1,800	1,270	-----
1906-7.												
1	1,270	1,340	1,540	3,370	13,200	5,270	5,940	4,370	3,510	3,040	1,740	1,740
2	1,270	1,340	1,590	3,100	22,300	4,850	6,160	4,180	3,430	2,900	1,740	1,740
3	1,270	1,420	1,500	8,010	44,800	4,660	5,820	4,000	3,510	3,040	1,650	1,830
4	1,270	1,640	1,500	31,700	48,300	4,560	5,270	3,750	3,350	3,040	1,740	1,740
5	1,270	1,800	1,500	7,880	41,300	4,370	5,000	3,670	3,510	2,760	1,740	1,740
6	1,270	1,800	1,640	5,310	22,700	4,180	18,100	3,670	3,510	2,760	1,740	1,740
7	1,270	2,160	1,800	4,760	15,000	4,000	15,800	3,590	3,510	2,760	1,830	1,740
8	1,270	2,100	3,370	4,030	12,600	4,090	12,000	3,510	3,510	2,900	1,740	1,650
9	1,270	1,910	2,370	3,100	9,220	4,000	10,700	3,510	3,510	2,900	2,030	1,650
10	1,270	1,740	2,300	3,020	9,220	4,000	11,300	3,590	3,510	2,760	1,830	1,560
11	1,270	1,460	2,230	2,760	8,810	4,180	10,700	3,590	3,430	3,320	1,740	1,560
12	1,270	1,420	2,300	2,680	6,990	4,180	9,760	3,830	3,350	2,260	1,740	1,400
13	1,270	1,460	2,450	2,520	6,990	3,920	9,620	3,670	3,350	2,260	1,920	1,400
14	1,270	1,500	2,160	2,600	6,630	3,750	9,220	3,590	3,350	2,140	1,980	1,560
15	1,340	1,540	2,450	2,380	6,400	3,670	8,810	3,510	3,430	2,200	1,920	1,320
16	1,400	2,300	3,280	2,300	6,160	3,670	7,750	3,510	3,350	2,140	1,780	1,320
17	1,590	2,380	2,520	2,300	5,380	4,000	7,110	3,350	3,270	2,140	1,740	1,560
18	1,590	2,230	2,380	2,230	4,750	35,200	6,630	3,350	3,350	2,030	1,740	1,560
19	1,460	1,800	2,450	2,160	4,950	16,500	6,750	3,590	3,190	2,030	1,740	1,320
20	1,340	1,590	2,840	2,100	4,750	19,700	6,400	3,590	3,190	2,030	1,560	1,320
21	1,340	1,740	2,760	2,100	4,850	15,000	6,280	3,430	3,190	2,140	1,560	1,320
22	1,340	1,800	2,450	2,030	5,940	13,200	6,280	3,590	3,270	2,140	1,650	1,320
23	1,340	1,640	2,520	2,100	6,990	11,600	6,160	3,670	3,190	1,980	1,740	1,320
24	1,380	1,500	2,760	2,230	7,880	9,350	6,050	3,670	3,190	1,830	1,780	1,400
25	1,420	1,500	4,870	2,450	7,230	7,880	5,710	3,670	3,120	1,830	1,740	1,320
26	1,460	1,460	7,880	3,100	6,750	6,630	5,490	3,590	3,190	1,830	1,650	1,400
27	1,420	1,500	4,650	3,640	5,940	6,510	5,060	3,510	3,040	1,740	1,650	1,320
28	1,340	1,460	3,740	5,540	5,060	6,280	4,750	3,510	3,040	1,740	1,650	1,320
29	1,340	1,460	3,740	9,080	-----	6,050	4,560	3,590	3,040	1,650	1,650	1,320
30	1,340	1,460	4,130	7,490	-----	5,820	4,370	3,670	3,040	1,740	1,560	1,320
31	1,340	-----	3,640	8,010	-----	6,050	-----	3,590	-----	1,740	1,650	-----

Daily discharge, in second-feet, of Rogue River near Tolo, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1,400	1,400	1,520	5,820	3,040	3,190	3,040	4,950	3,270	2,900	1,740	1,480
2.....	1,400	1,400	1,560	4,950	3,040	3,190	3,040	4,950	3,190	2,900	1,700	1,480
3.....	1,320	1,400	1,560	4,850	2,970	3,190	3,120	4,950	3,120	2,900	1,650	1,440
4.....	1,400	1,400	1,560	4,850	2,900	3,190	3,190	4,750	3,040	2,900	1,650	1,440
5.....	1,400	1,360	1,560	4,280	2,970	3,040	3,040	4,560	3,040	2,830	1,650	1,400
6.....	1,320	1,320	1,520	4,000	5,600	3,040	3,040	4,090	3,040	2,700	1,600	1,400
7.....	1,320	1,320	1,480	4,000	5,710	2,900	3,040	4,000	3,040	2,500	1,560	1,400
8.....	1,320	1,320	3,270	4,180	5,160	2,830	2,900	3,920	3,190	2,380	1,480	1,400
9.....	1,320	1,320	2,630	10,300	4,950	2,900	3,040	3,750	3,190	2,260	1,480	1,400
10.....	1,320	1,320	2,630	7,880	4,560	2,760	3,040	3,830	3,750	2,260	1,480	1,400
11.....	1,320	1,320	2,030	5,270	4,660	2,760	3,190	3,670	3,920	2,260	1,480	1,400
12.....	1,320	1,320	4,000	4,950	4,460	2,900	3,190	3,370	3,920	2,260	1,480	1,400
13.....	1,320	1,250	9,220	4,560	3,350	2,900	3,920	3,190	3,750	2,260	1,480	1,480
14.....	1,320	1,250	3,510	12,900	3,190	2,970	4,370	3,920	3,590	2,380	1,520	1,480
15.....	1,250	1,250	2,440	6,750	3,040	3,040	3,040	5,600	4,180	3,430	2,320	1,480
16.....	1,250	1,250	2,200	5,600	3,190	4,000	5,600	4,180	3,350	2,260	1,480	1,480
17.....	1,250	1,250	2,500	4,850	3,040	6,400	6,750	4,000	3,270	2,260	1,480	1,480
18.....	1,250	1,320	2,200	4,560	3,040	5,820	5,940	4,950	3,190	2,260	1,480	1,480
19.....	1,250	1,320	2,080	4,370	3,040	4,750	5,820	5,060	3,190	2,140	1,480	1,480
20.....	1,190	1,320	2,500	10,000	2,900	4,370	6,160	4,850	3,040	2,140	1,480	1,480
21.....	1,320	1,560	2,560	6,630	2,900	4,180	5,940	4,460	3,920	2,140	1,480	1,480
22.....	1,320	1,480	14,300	5,160	2,900	4,000	5,820	4,370	3,590	2,080	1,400	1,480
23.....	1,320	1,650	10,300	4,370	2,630	2,830	5,600	4,030	3,350	2,030	1,400	1,480
24.....	1,190	1,480	15,000	5,380	2,760	2,760	6,160	4,000	3,190	1,920	1,400	1,480
25.....	1,250	1,920	6,280	4,370	2,760	2,970	5,710	4,000	3,190	1,920	1,400	1,480
26.....	1,250	1,650	29,400	4,180	2,630	3,350	5,490	3,920	3,190	1,920	1,480	1,480
27.....	1,320	1,650	17,300	4,000	2,830	3,350	5,160	3,830	3,040	1,880	1,480	1,480
28.....	1,320	1,560	4,850	3,350	2,900	3,190	4,950	3,750	3,040	1,880	1,480	1,480
29.....	1,320	1,480	7,750	3,190	3,040	3,120	4,950	3,670	2,900	1,740	1,480	1,480
30.....	1,560	1,480	6,050	3,190	.....	3,040	4,950	3,670	2,900	1,740	1,560	1,480
31.....	1,650	.....	6,280	3,040	.....	3,190	.....	3,510	.....	1,740	1,480	.....
1908-9.												
1.....	1,520	1,650	1,980	1,920	4,280	5,160	3,040	3,510	3,830	1,700	1,650	1,400
2.....	1,520	1,650	1,920	1,920	3,920	4,750	3,040	3,590	4,180	1,650	1,560	1,400
3.....	1,560	1,650	1,920	2,200	6,630	4,750	3,040	4,090	4,180	1,650	1,650	1,400
4.....	1,560	1,650	1,920	4,750	6,280	5,490	3,190	4,560	4,000	1,740	1,560	1,400
5.....	1,520	1,650	1,920	20,000	6,160	5,000	3,190	4,370	3,670	1,880	1,480	1,400
6.....	1,520	1,650	1,920	13,200	5,270	4,560	3,040	3,920	3,430	2,030	1,480	1,400
7.....	1,520	1,560	1,880	16,700	5,710	4,370	3,120	3,750	3,350	2,200	1,480	1,400
8.....	1,480	1,560	1,740	25,900	5,160	4,180	3,040	3,670	3,120	2,260	1,480	1,400
9.....	1,480	1,560	1,740	11,200	5,270	4,180	3,040	3,670	2,900	2,200	1,480	1,400
10.....	1,480	1,560	1,650	7,230	5,710	4,090	3,040	3,430	2,760	2,080	1,480	1,400
11.....	1,480	1,560	1,650	6,750	5,600	4,000	3,190	3,270	2,760	2,030	1,480	1,440
12.....	1,560	1,560	1,650	5,490	5,490	3,830	3,190	3,040	2,970	2,030	1,480	1,480
13.....	1,560	1,560	1,650	5,380	6,630	3,510	3,190	3,040	2,700	1,880	1,480	1,480
14.....	2,320	1,560	1,650	9,480	6,050	3,430	3,190	2,970	2,320	1,830	1,480	1,480
15.....	3,670	1,560	1,650	14,600	5,940	3,190	3,350	3,040	2,380	1,740	1,480	1,480
16.....	3,510	1,560	1,650	29,800	6,280	3,190	3,510	2,970	2,760	1,650	1,480	1,480
17.....	2,320	1,560	1,650	16,500	12,200	3,190	3,510	2,830	2,830	1,650	1,400	1,480
18.....	2,200	1,560	1,650	16,200	10,900	3,270	3,510	2,700	2,760	1,650	1,400	1,480
19.....	1,920	3,040	1,650	17,000	10,900	3,670	3,670	2,630	2,630	1,650	1,360	1,560
20.....	1,920	4,660	1,650	28,200	11,000	3,830	3,670	2,500	2,630	1,650	1,320	1,560
21.....	1,920	4,280	1,650	25,600	8,540	3,750	3,350	2,440	2,630	1,740	1,320	1,560
22.....	1,920	6,510	1,650	20,500	6,750	3,670	3,270	2,380	2,630	1,740	1,320	1,480
23.....	1,920	4,750	1,650	12,800	6,050	3,350	3,190	2,320	2,560	1,740	1,320	1,480
24.....	1,780	3,590	2,080	9,760	6,870	3,350	3,190	2,380	2,440	1,650	1,400	1,480
25.....	1,780	4,180	2,380	8,540	7,110	3,350	3,350	2,440	2,320	1,700	1,400	1,480
26.....	1,740	3,510	2,080	6,990	6,400	3,120	3,270	2,560	2,200	1,780	1,400	1,560
27.....	1,700	3,350	2,140	6,160	5,820	3,040	3,270	2,760	2,140	1,740	1,400	1,560
28.....	1,650	2,500	2,700	5,490	5,600	3,040	4,000	3,830	2,080	1,700	1,400	1,560
29.....	1,650	2,200	3,510	5,160	.....	3,040	3,920	3,590	1,980	1,650	1,400	1,560
30.....	1,650	2,080	3,190	5,270	.....	3,120	3,830	3,430	1,880	1,650	1,400	1,560
31.....	1,650	.....	2,560	4,950	.....	3,040	.....	3,510	.....	1,650	1,400	.....

Daily discharge, in second-feet, of Rogue River near Tolo, Oreg., for 1905-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,560	3,040	9,080	3,920	6,280	16,800	3,350	3,670	2,580	1,810	1,380	1,180
2.....	1,560	2,700	8,010	3,670	5,060	15,600	3,430	3,670	2,580	1,810	1,330	1,180
3.....	1,560	2,200	6,400	3,430	4,560	11,800	3,030	3,590	2,580	1,810	1,330	1,180
4.....	1,560	1,920	6,050	2,960	4,370	10,300	3,030	3,430	2,580	1,810	1,330	1,180
5.....	1,560	1,980	5,820	2,800	4,180	8,680	3,030	3,350	2,580	1,810	1,420	1,180
6.....	1,560	2,080	6,050	2,730	4,000	7,490	3,030	3,270	2,580	1,810	1,420	1,180
7.....	1,560	2,030	6,050	2,730	3,830	6,750	2,880	3,110	2,510	1,810	1,420	1,180
8.....	1,560	2,030	6,630	2,730	3,670	6,280	2,730	3,030	2,440	1,810	1,420	1,180
9.....	1,560	2,080	14,400	2,730	3,510	6,050	2,730	2,880	2,300	1,810	1,420	1,180
10.....	1,560	2,380	8,010	2,730	3,590	6,050	2,730	4,180	2,300	1,810	1,420	1,180
11.....	1,520	2,380	6,870	2,660	3,430	5,940	2,730	4,090	2,300	1,700	1,420	1,180
12.....	1,480	2,260	7,750	2,730	3,430	5,710	2,730	3,020	2,300	1,700	1,420	1,180
13.....	1,480	2,200	8,680	2,660	3,350	5,940	2,580	3,350	2,300	1,700	1,420	1,180
14.....	1,480	2,030	7,360	2,660	3,190	6,050	2,580	3,270	2,300	1,700	1,420	1,180
15.....	1,480	1,920	6,400	2,730	3,030	6,050	2,580	3,190	2,300	1,700	1,420	1,180
16.....	1,480	1,920	5,600	2,660	3,190	6,050	2,580	3,270	2,300	1,700	1,420	1,180
17.....	1,480	1,920	4,950	2,580	3,430	5,600	2,800	3,030	2,300	1,700	1,420	1,180
18.....	1,480	1,880	5,160	2,660	4,280	5,710	2,880	3,030	2,300	1,650	1,420	1,180
19.....	1,480	2,560	4,460	2,880	8,140	6,050	3,350	3,030	2,300	1,600	1,420	1,180
20.....	1,480	25,000	4,180	2,580	5,940	5,710	3,920	2,880	2,300	1,600	1,420	1,220
21.....	1,480	18,900	3,920	2,580	4,370	5,710	3,670	2,880	2,300	1,560	1,420	1,250
22.....	1,480	25,900	3,750	4,280	3,830	5,820	4,000	2,880	2,240	1,510	1,420	1,220
23.....	1,480	48,300	3,430	5,490	4,000	8,140	4,000	2,880	2,170	1,510	1,420	1,180
24.....	1,480	28,200	3,190	5,940	9,480	6,050	4,180	2,880	2,170	1,510	1,420	1,180
25.....	1,480	16,700	3,110	4,850	11,600	5,270	3,920	2,880	2,170	1,420	1,420	1,180
26.....	1,480	10,900	2,880	4,280	9,220	4,850	3,830	2,880	2,100	1,420	1,420	1,180
27.....	1,480	8,940	2,880	4,180	7,750	4,090	3,750	2,880	1,920	1,420	1,420	1,180
28.....	1,520	8,270	2,880	5,270	11,900	4,000	3,590	2,800	1,920	1,420	1,330	1,180
29.....	1,560	7,360	2,880	6,280	.....	4,000	3,750	2,730	1,810	1,420	1,290	1,180
30.....	1,600	12,300	2,800	5,600	.....	3,510	3,920	2,730	1,810	1,420	1,220	1,180
31.....	1,700	.....	4,660	5,490	.....	3,350	.....	2,730	.....	1,420	1,180	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: Sept. 1, 1905, to Feb. 3, 1907, fairly well defined between 1,200 and 6,000 second-feet; Feb. 4, 1907, to Nov. 23, 1909, poorly defined, especially for 1909; Nov. 24, 1909, to Sept. 30, 1910, well defined between 1,270 and 6,050 second-feet.

Monthly discharge of Rogue River near Tolo, Oreg., for 1905-1910.

[Drainage area, 2,020 square miles.]

Month.	Discharge in second-feet.			Run-off.			Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
September.....	1,690	1,240	1,300	0.644	0.72	77,400	B.
1905-6.							
October.....	1,690	1,300	1,390	.688	.79	85,500	B.
November.....	1,560	1,340	1,370	.678	.76	81,500	B.
December.....	1,930	1,320	1,490	.738	.85	91,600	B.
January.....	27,800	1,480	4,000	1.98	2.28	246,000	B.
February.....	7,750	2,090	4,040	2.00	2.08	224,000	B.
March.....	8,810	2,760	3,840	1.90	2.19	236,000	B.
April.....	7,060	3,640	4,370	2.16	2.41	260,000	B.
May.....	7,750	3,100	4,220	2.09	2.41	259,000	B.
June.....	5,540	2,450	3,840	1.90	2.12	228,000	B.
July.....	3,100	1,800	2,440	1.21	1.40	150,000	B.
August.....	1,690	1,230	1,390	.688	.79	85,500	B.
September.....	1,590	1,230	1,310	.648	.72	78,000	B.
The year.....	27,800	1,230	2,810	1.39	18.80	2,030,000	

Monthly discharge of Rogue River near Tolo, Oreg., for 1905-1910—Continued.

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1906-7.							
October.....	1,590	1,270	1,340	0.663	0.76	82,400	B.
November.....	2,380	1,340	1,680	.832	.93	100,000	B.
December.....	7,880	1,500	2,820	1.40	1.61	173,000	B.
January.....	31,700	2,030	4,710	2.33	2.69	290,000	C.
February.....	48,300	4,750	12,500	6.19	6.45	694,000	C.
March.....	35,200	-3,670	7,650	3.79	4.37	470,000	C.
April.....	18,100	4,370	7,800	3.86	4.31	464,000	C.
May.....	4,370	3,350	3,640	1.80	2.08	224,000	C.
June.....	3,510	3,040	3,310	1.64	1.83	197,000	C.
July.....	3,040	1,650	2,290	1.13	1.30	141,000	C.
August.....	2,030	1,560	1,740	.861	.99	107,000	C.
September.....	1,830	1,320	1,490	.738	.82	88,700	C.
The year.....	48,300	1,270	4,250	2.10	28.14	3,030,000	
1907-8.							
October.....	1,650	1,190	1,320	.653	.75	81,200	D.
November.....	1,920	1,250	1,410	.698	.78	83,900	D.
December.....	29,400	1,480	5,550	2.75	3.17	341,000	D.
January.....	12,900	3,040	5,350	2.65	3.06	329,000	D.
February.....	5,710	2,630	3,450	1.71	1.84	198,000	D.
March.....	6,400	2,760	3,420	1.69	1.85	240,000	D.
April.....	6,750	2,900	4,530	2.24	2.50	270,000	C.
May.....	5,060	3,190	4,150	2.05	2.36	255,000	C.
June.....	3,920	2,900	3,290	1.63	1.82	196,000	C.
July.....	2,900	1,740	2,260	1.12	1.29	139,000	C.
August.....	1,740	1,400	1,510	.748	.86	92,800	D.
September.....	1,480	1,400	1,460	.723	.81	86,900	D.
The year.....	29,400	1,190	3,140	1.55	21.19	2,280,000	
1908-9.							
October.....	3,670	1,480	1,840	.911	1.05	113,000	C.
November.....	6,510	1,560	2,440	1.21	1.35	145,000	C.
December.....	3,510	1,650	1,960	.970	1.12	121,000	C.
January.....	29,800	1,920	11,800	5.84	6.73	726,000	C.
February.....	11,000	3,920	6,730	3.33	3.47	374,000	C.
March.....	5,490	3,040	3,790	1.88	2.17	233,000	C.
April.....	4,000	3,040	3,310	1.64	1.83	197,000	C.
May.....	4,560	2,320	3,200	1.58	1.82	197,000	C.
June.....	4,180	1,880	2,830	1.40	1.56	168,000	C.
July.....	2,260	1,650	1,800	.891	1.03	111,000	D.
August.....	1,650	1,320	1,450	.718	.83	89,200	D.
September.....	1,560	1,400	1,470	.728	.81	87,500	D.
The year.....	29,800	1,320	3,550	1.76	23.77	2,560,000	
1909-10.							
October.....	1,700	1,480	1,520	.752	.87	93,500	D.
November.....	48,300	1,880	8,410	4.16	4.64	500,000	C.
December.....	14,400	2,780	5,620	2.78	3.20	346,000	C.
January.....	6,280	2,580	3,600	1.78	2.05	221,000	B.
February.....	11,900	3,030	5,240	2.59	2.70	291,000	B.
March.....	16,800	3,350	6,750	3.34	3.85	415,000	B.
April.....	4,180	2,580	3,240	1.60	1.78	193,000	B.
May.....	4,180	2,730	3,180	1.57	1.81	196,000	B.
June.....	2,580	1,810	2,290	1.13	1.26	136,000	B.
July.....	1,810	1,420	1,640	.812	.94	101,000	B.
August.....	1,420	1,180	1,390	.688	.79	85,500	B.
September.....	1,250	1,180	1,180	.584	.65	70,200	B.
The year.....	48,300	1,180	3,670	1.82	24.54	2,650,000	

ROGUE RIVER NEAR GALICE, OREG.

Location.—In sec. 9, T. 35 S., R. 7 W., at the ferry on the Merlin-Galice road.

Records presented.—May 16 to December 31, 1906.

Drainage area.—Not measured.

Gage.—Inclined staff on left bank.

Cooperation.—The entire record has been furnished by Charles Gilman Hyde, Univeristy of California, Berkeley, Cal.

Discharge measurements of Rogue River near Galice, Oreg., in 1906.

Date.	Hydrographer.	Gage height.	Dis-charge.
May 16	C. G. Hyde.....	<i>Feet.</i> 6.5	<i>Sec.-ft.</i> 4,170
Aug. 6	.....do.....	4.5	1,400

Daily gage height, in feet, of Rogue River at Galice, Oreg., for 1906.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.....		7.5	5.6	4.5	4.35	4.4	4.35	4.6
2.....		7.4	5.5	4.5	4.35	4.4	4.4	4.6
3.....		7.3	5.5	4.5	4.35	4.4	4.5	4.5
4.....		7.6	5.4	4.5	4.35	4.4	4.6	4.5
5.....		7.4	5.4	4.5	4.35	4.4	4.85	4.6
6.....		7.1	5.3	4.5	4.35	4.35	4.75	5.3
7.....		7.2	5.3	4.5	4.3	4.35	4.65	5.8
8.....		7.1	5.2	4.5	4.25	4.35	5.8	6.3
9.....		7.7	5.15	4.5	4.4	4.3	5.0	6.1
10.....		7.5	5.05	4.4	4.5	4.35	4.8	6.0
11.....		7.3	5.0	4.4	4.4	4.35	4.8	5.8
12.....		7.5	5.0	4.4	4.35	4.35	4.8	5.6
13.....		7.2	4.9	4.4	4.5	4.35	4.75	5.5
14.....		7.0	4.9	4.4	4.7	4.35	4.75	5.4
15.....		6.8	4.9	4.4	4.6	4.4	5.0	5.8
16.....		7.2	4.9	4.4	4.5	4.4	5.85	6.8
17.....		6.9	4.8	4.4	4.5	4.5	5.85	6.2
18.....		6.7	4.8	4.4	4.5	4.5	5.8	5.7
19.....		6.5	4.8	4.4	4.4	4.5	5.5	5.5
20.....		6.4	4.7	4.4	4.4	4.5	5.0	5.7
21.....		6.3	4.7	4.4	4.5	4.5	5.0	6.0
22.....		6.2	4.7	4.4	4.5	4.5	5.2	5.7
23.....		6.1	4.7	4.4	4.4	4.45	5.0	5.6
24.....		6.1	4.7	4.4	4.4	4.45	5.0	5.6
25.....		6.0	4.6	4.4	4.4	4.45	4.9	6.7
26.....		5.9	4.6	4.4	4.4	4.4	4.9	9.8
27.....		5.9	4.6	4.4	4.4	4.4	4.8	8.1
28.....		5.8	4.5	4.4	4.4	4.4	4.7	7.0
29.....	9.0	5.7	4.5	4.4	4.3	4.35	4.7	6.8
30.....	8.6	5.6	4.5	4.4	4.3	4.35	4.6	7.5
31.....	8.5		4.5	4.4		4.35		7.0

Daily discharge, in second-feet, of Rogue River near Galice, Oreg., for 1906.

Day.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1.	5,900	2,700	1,400	1,300	1,350	1,300	1,500
2.	5,720	2,550	1,400	1,300	1,350	1,350	1,500
3.	5,550	2,550	1,400	1,300	1,350	1,400	1,400
4.	6,050	2,400	1,400	1,300	1,350	1,500	1,400
5.	5,720	2,400	1,400	1,300	1,350	1,750	1,500
6.	5,200	2,250	1,400	1,300	1,300	1,650	2,250
7.	5,350	2,250	1,400	1,250	1,300	1,550	3,000
8.	5,200	2,150	1,400	1,220	1,300	3,000	3,850
9.	6,200	2,100	1,400	1,350	1,250	1,900	3,500
10.	5,900	1,950	1,350	1,400	1,300	1,700	3,350
11.	5,550	1,900	1,350	1,350	1,300	1,700	3,000
12.	5,900	1,900	1,350	1,300	1,300	1,700	2,700
13.	5,350	1,800	1,350	1,400	1,300	1,610	2,550
14.	5,040	1,800	1,350	1,600	1,300	1,650	2,400
15.	4,700	1,800	1,350	1,500	1,350	1,900	3,000
16.	5,350	1,800	1,350	1,400	1,350	3,120	4,700
17.	4,850	1,700	1,350	1,400	1,400	3,120	3,700
18.	4,550	1,700	1,350	1,400	1,400	3,000	2,850
19.	4,200	1,700	1,350	1,350	1,400	2,550	2,550
20.	4,000	1,600	1,350	1,350	1,400	1,900	2,850
21.	3,850	1,600	1,350	1,400	1,400	1,900	3,380
22.	3,700	1,600	1,350	1,400	1,400	2,150	2,850
23.	3,500	1,600	1,350	1,350	1,380	1,900	2,700
24.	3,500	1,600	1,350	1,350	1,380	1,900	2,700
25.	3,350	1,500	1,350	1,350	1,380	1,800	4,550
26.	3,250	1,500	1,350	1,350	1,350	1,800	9,950
27.	3,250	1,500	1,350	1,350	1,350	1,700	6,950
28.	3,000	1,400	1,350	1,350	1,350	1,600	5,040
29.	2,850	1,400	1,350	1,250	1,300	1,600	4,700
30.	2,700	1,400	1,350	1,250	1,300	1,500	5,900
31.		1,400	1,350		1,300		5,040

Monthly discharge of Rogue River near Galice, Oreg., for 1906.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
June.....	6,250	2,700	4,640	276,000
July.....	2,700	1,400	1,850	114,000
August.....	1,400	1,350	1,360	83,600
September.....	1,600	1,220	1,350	80,300
October.....	1,400	1,300	1,340	82,400
November.....	3,120	1,300	1,910	114,000
December.....	9,950	1,400	3,460	213,000
The period.....				963,000

MILL CREEK AT PROSPECT, OREG.

Location.—In sec. 29, T. 32 S., R. 3 E., 100 feet above the highway bridge in Prospect, about 1 mile above mouth of stream.

Records presented.—August 23 to September 30, 1910.

Drainage area.—Not measured.

Gage.—Vertical staff fastened to a stump on right bank.

Channel.—Gravel and bowlders; obstructed by fallen logs.

Discharge measurements.—Made by wading.

Cooperation.—Gage-height record furnished by the United States Forest Service.

The following discharge measurement was made by Ebert and Heintzleman:
August 23, 1910: Gage height, 2.04 feet; discharge, 46 second-feet.

Daily gage height, in feet, of Mill Creek at Prospect, Oreg., for 1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1			11			21		2.1
2		2.0	12			22		
3			13			23	2.0	
4		2.0	14			24		
5			15		2.0	25		
6		2.0	16			26	2.0	2.0
7			17			27	2.0	
8		2.0	18			28		
9			19			29	2.0	
10			20			30	2.0	2.0
						31	2.0	

SOUTH FORK OF BIG BUTTE CREEK AT BUTTE FALLS, OREG.

Location.—In the SE. $\frac{1}{4}$ sec. 11, T. 35 S., R. 2 E., at the county bridge, about 1 mile above Butte Falls, 2 miles above mouth of stream.

Records presented.—September 20 to 30, 1910.

Drainage area.—121 square miles.

Gage.—Vertical staff fastened to bridge pier.

Channel.—Rocks and gravel; shifts somewhat.

Discharge measurements.—Made by wading or from the highway bridge.

Accuracy.—Results somewhat impaired by the shifting of the channel and the infrequency of the discharge measurements.

The following discharge measurement was made by B. F. Heintzleman:

September 20, 1910: Gage height, 1.41 feet; discharge, 123 second-feet.

Gage height, in feet, of South Fork of Big Butte Creek at Butte Falls, Oreg., for 1910.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1		11		21	1.4
2		12		22	1.4
3		13		23	1.4
4		14		24	1.4
5		15		25	1.4
6		16		26	1.4
7		17		27	1.4
8		18		28	1.4
9		19		29	
10		20		30	1.4
				31	

LITTLE BUTTE CREEK NEAR EAGLE POINT, OREG.

Location.—In the S. $\frac{1}{2}$ sec. 35, T. 35 S., R. 1 W., 1 mile above Eagle Point, at H. B. Tronson's fruit ranch.

Records presented.—July 13, 1907, to September 30, 1910.

Drainage area.—336 square miles.

Gage.—Vertical staff spiked to alder trees on left bank.

Channel.—Sand at measuring section; solid rock control.

Discharge measurements.—Made from cable suspension bridge 40 feet above gage.

Winter flow.—Unaffected by ice.

Diversions.—A number of small irrigation diversions above the station. The main canal of Rogue River Valley Canal Co. diverts a considerable part of the flow of the stream past the station; also the pipe line, capacity about 7.5 second-feet, for municipal supply of city of Medford.

Storage.—A small amount developed at Fish Lake but not being used at present.

Accuracy.—Conditions favor accurate estimates.

Discharge measurements of Little Butte Creek near Eagle Point, Oreg., in 1907-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1907.		<i>Fect.</i>	<i>Sec.-ft.</i>	1908.		<i>Fect.</i>	<i>Sec.-ft.</i>
July 13	J. C. Stevens.....	1.10	81	Dec. 28	H. Kimble.....	1.66	217
Aug. 28	C. E. Ellsworth.....	1.10	86				
Sept. 13	.....do.....	1.08	68	1909.			
Oct. 30	.....do.....	1.30	117	Sept. 17	A. P. Stover.....	.75	37.1
1908.				1910.			
Feb. 9	C. E. Ellsworth.....	2.22	414	Aug. 2)	Heintzleman and Ebert	.77	41.1
May 13	.....do.....	1.92	271	25	.....do.....	.74	42.4
Sept. 12	H. Kimble.....	.90	42	Sept. 19	B. F. Heintzleman.....	1.02	67.0
Nov. 16	H. D. McGlashan.....	1.19	81				

Daily gage height, in feet, of Little Butte Creek near Eagle Point, Oreg., for 1907-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1907.				1907.				1907.			
1.....		0.90	1.30	11.....		1.20	1.10	21.....	1.05	1.05	1.10
2.....		.90	1.25	12.....		1.20	1.10	22.....	1.05	1.05	1.10
3.....		.90	1.15	13.....	1.10	1.15	1.10	23.....	1.05	1.05	1.10
4.....		.90	1.15	14.....	1.09	1.15	1.10	24.....	1.05	1.37	1.10
5.....		.90	1.15	15.....	1.09	1.15	1.10	25.....	1.00	1.28	1.10
6.....		.90	1.10	16.....	1.09	1.15	1.10	26.....	1.00	1.15	1.10
7.....		1.90	1.10	17.....	1.09	1.10	1.10	27.....	1.00	1.15	1.25
8.....		1.17	1.10	18.....	1.09	1.10	1.10	28.....	1.00	1.10	1.25
9.....		1.32	1.10	19.....	1.09	1.10	1.10	29.....	.95	1.10	1.20
10.....		1.24	1.10	20.....	1.05	1.05	1.10	30.....	.95	1.10	1.15
								31.....	.95	1.10	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1.32	1.25	1.40	2.30	1.50	1.90	1.85	1.72	1.85	1.02	0.80	0.80
2.....	1.35	1.32	1.35	2.15	1.40	1.60	1.95	1.62	1.85	1.00	.80	.80
3.....	1.30	1.35	1.35	2.00	1.40	1.48	2.00	1.60	1.80	1.00	.80	.80
4.....	1.30	1.35	1.35	2.10	1.30	1.45	2.00	1.60	1.80	1.00	.80	.80
5.....	1.30	1.30	1.35	2.02	2.67	1.38	2.10	1.72	1.80	1.00	.80	.80
6.....	1.30	1.30	1.35	1.90	2.25	1.30	2.10	1.80	1.80	1.00	.80	.80
7.....	1.30	1.30	1.35	1.78	1.70	1.30	2.10	2.00	1.72	1.00	.80	.80
8.....	1.30	1.28	1.35	1.80	1.50	1.30	2.15	2.00	1.65	1.00	.80	.80
9.....	1.30	1.28	1.30	3.00	2.15	1.30	2.15	1.95	1.58	1.00	.80	.80
10.....	1.30	1.28	1.30	2.40	2.10	1.30	2.12	1.95	1.55	1.00	.80	.80
11.....	1.30	1.28	1.35	2.15	1.90	1.30	2.10	1.90	1.48	1.00	.80	.80
12.....	1.30	1.28	2.27	2.05	1.90	1.60	1.70	1.98	1.45	1.00	.80	.80
13.....	1.30	1.28	3.45	2.10	1.70	1.75	1.70	2.00	1.40	1.00	.80	.80
14.....	1.25	1.28	2.35	4.70	1.70	1.85	1.90	2.00	1.30	1.00	.80	.80
15.....	1.25	1.20	1.90	3.00	1.60	1.95	2.20	2.65	1.30	.95	.80	.80
16.....	1.25	1.20	1.58	2.25	1.60	2.10	3.05	2.70	1.30	.92	.80	1.00
17.....	1.20	1.20	1.50	2.20	1.50	2.40	2.95	2.55	1.30	.90	.80	.95
18.....	1.20	1.20	1.50	2.20	1.40	2.25	2.95	3.30	1.30	.90	.80	.95
19.....	1.20	1.20	1.75	2.25	1.40	1.95	2.90	3.20	1.30	.90	.80	1.10
20.....	1.20	1.35	1.73	3.00	1.40	2.05	2.78	3.00	1.30	.90	.80	1.10
21.....	1.20	1.50	1.70	2.70	1.30	2.10	2.68	2.90	1.25	.90	.80	1.10
22.....	1.20	1.42	4.55	2.60	1.30	2.10	2.60	2.80	1.25	.90	.80	1.10
23.....	1.20	1.40	6.15	2.20	1.30	2.10	2.50	2.90	1.20	.90	.80	1.10
24.....	1.20	1.40	3.60	1.90	1.40	2.20	2.40	2.65	1.20	.90	.80	1.10
25.....	1.20	1.40	3.68	1.70	1.40	2.15	2.30	2.50	1.20	.90	.80	1.10
26.....	1.20	1.35	7.65	1.50	1.30	2.05	2.10	2.40	1.20	.90	.80	1.10
27.....	1.25	1.35	4.50	1.50	1.30	2.00	2.05	2.05	1.20	.90	.80	1.10
28.....	1.25	1.35	3.10	1.50	1.30	1.90	2.00	2.00	1.15	.90	.80	1.10
29.....	1.25	1.40	2.75	1.50	1.85	1.90	1.92	1.95	1.12	.85	.80	1.10
30.....	1.25	1.40	2.65	1.50	.....	1.80	1.85	1.95	1.10	.85	.80	1.10
31.....	1.25	.....	2.40	1.50	.....	1.80	.....	1.90	.....	.85	.80	.....

Daily gage height, in feet, of Little Butte Creek near Eagle Point, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	1.10	1.30	2.40	1.45	1.9	2.9	1.8	1.5	1.4	1.0	0.8	0.85
2.....	1.10	1.30	2.35	1.4	1.9	3.1	1.8	1.5	1.4	1.0	.8	.85
3.....	1.10	1.28	2.32	1.45	4.25	2.6	1.92	1.5	1.35	1.0	.8	.85
4.....	1.10	1.25	2.20	1.65	3.45	2.3	1.8	1.5	1.35	1.0	.8	.85
5.....	1.10	1.25	2.20	7.1	2.6	2.3	1.75	1.5	1.45	.95	.8	.85
6.....	1.10	1.25	2.15	3.7	2.2	2.3	1.75	1.5	1.35	.95	.8	.85
7.....	1.10	1.20	2.12	4.2	3.15	2.25	1.75	1.5	1.3	.95	.8	.85
8.....	1.10	1.20	2.08	6.0	3.5	2.2	1.75	1.5	1.3	.95	.8	.85
9.....	1.10	1.20	2.05	4.75	3.1	2.2	1.7	1.5	1.3	.95	.8	.85
10.....	1.10	1.20	2.00	3.6	2.9	2.18	1.7	1.5	1.3	.95	.8	.85
11.....	1.10	1.20	2.00	2.62	2.6	2.15	1.7	1.5	1.3	.9	.8	.85
12.....	1.10	1.20	2.40	2.10	2.5	2.15	1.7	1.5	1.3	.85	.8	.85
13.....	1.10	1.20	2.28	1.85	2.5	2.15	1.7	1.5	1.25	.85	.8	1.0
14.....	1.10	1.20	2.20	6.8	2.4	2.15	1.65	1.7	1.25	.85	.8	.85
15.....	2.72	1.20	2.10	7.0	2.4	2.15	1.6	1.65	1.25	.85	.8	.85
16.....	2.62	1.35	2.00	5.4	3.75	2.1	1.6	1.62	1.25	.85	.8	.85
17.....	2.50	1.30	1.85	5.25	3.0	2.1	1.7	1.6	1.2	.85	.8	.85
18.....	2.38	1.30	1.55	4.45	4.3	2.08	1.68	1.58	1.2	.85	.8	.85
19.....	2.15	1.30	1.25	4.7	2.95	2.05	1.65	1.55	1.2	.85	.8	.85
20.....	1.98	2.15	1.35	6.83	3.3	2.05	1.62	1.5	1.2	.85	.8	.85
21.....	1.82	2.00	1.25	5.25	3.3	2.05	1.6	1.5	1.15	.85	.8	.85
22.....	1.72	3.25	1.25	5.1	3.0	2.02	1.6	1.5	1.15	.85	.8	.85
23.....	1.65	2.80	2.32	3.85	2.7	2.0	1.6	1.45	1.15	.85	.8	.85
24.....	1.65	3.00	1.70	3.2	2.6	1.98	1.55	1.45	1.15	.85	.8	.85
25.....	1.60	2.70	1.48	2.9	2.45	1.95	1.55	1.45	1.15	.85	.8	.95
26.....	1.55	2.60	2.38	2.5	2.4	1.95	1.55	1.45	1.1	.85	.8	.95
27.....	1.52	2.60	1.82	2.35	2.35	1.9	1.55	1.45	1.1	.85	.8	.95
28.....	1.50	2.58	2.25	2.1	2.8	1.9	1.55	1.42	1.1	.8	.8	.95
29.....	1.45	2.52	1.78	2.0	-----	1.85	1.5	1.4	1.0	.8	.8	1.2
30.....	1.45	2.50	1.60	2.0	-----	1.85	1.5	1.4	1.0	.8	.8	1.2
31.....	1.40	-----	1.50	1.9	-----	1.8	-----	1.4	-----	.8	.85	-----
1909-10.												
1.....	1.3	1.4	3.12	1.75	3.15	3.15	2.15	1.75	1.2	.9	.8	.75
2.....	1.3	1.3	2.85	1.6	3.1	3.3	2.0	1.7	1.15	.9	.8	.75
3.....	1.3	1.25	2.8	1.55	2.95	4.05	2.0	1.7	1.15	.9	.75	.75
4.....	1.3	1.2	2.7	1.5	2.85	3.9	1.9	1.65	1.15	.8	.75	.75
5.....	1.25	1.2	2.55	1.5	2.8	3.8	1.9	1.6	1.1	.8	.75	.75
6.....	1.25	1.2	2.75	1.5	2.65	3.75	1.9	1.6	1.1	.8	.75	.75
7.....	1.25	1.2	2.95	1.45	2.55	3.7	1.85	1.6	1.1	.8	.75	.75
8.....	1.2	1.2	4.15	1.45	2.35	3.7	1.85	1.5	1.1	.8	.75	.75
9.....	1.2	1.2	2.85	1.4	2.3	3.6	1.8	1.5	1.0	.8	.75	.75
10.....	1.2	1.2	2.8	1.4	2.3	3.5	1.8	1.8	1.0	.8	.75	.75
11.....	1.2	1.2	2.85	1.4	2.5	3.35	1.8	1.75	1.0	.8	.75	.75
12.....	1.2	1.2	3.45	1.4	2.35	3.25	1.8	1.7	1.0	.8	.75	.75
13.....	1.2	1.32	2.95	1.5	2.2	3.2	1.8	1.65	1.0	.8	.75	.75
14.....	1.2	1.3	2.62	1.5	2.4	3.1	1.7	1.6	1.0	.8	.75	.75
15.....	1.2	1.25	2.5	1.45	2.3	3.1	1.7	1.55	1.0	.8	.75	.75
16.....	1.2	1.25	2.3	1.45	2.2	3.0	1.7	1.55	1.0	.8	.75	.75
17.....	1.2	1.32	2.3	1.4	2.35	3.0	1.65	1.5	1.0	.8	.75	.75
18.....	1.2	2.25	2.2	1.4	3.25	2.9	1.6	1.5	1.0	.8	.75	.8
19.....	1.2	3.0	2.2	1.4	2.9	2.85	1.6	1.4	1.0	.8	.75	1.0
20.....	1.2	5.35	2.1	1.35	2.5	2.8	1.5	1.4	1.0	.95	.75	1.2
21.....	1.2	4.85	1.98	1.35	2.4	4.1	1.5	1.4	1.0	.9	.75	1.2
22.....	1.2	6.4	1.82	1.3	2.3	4.25	1.5	1.35	.95	.9	.75	1.2
23.....	1.2	7.65	1.72	1.3	2.3	3.65	1.45	1.35	.95	.8	.75	1.2
24.....	1.2	5.85	1.6	1.3	3.2	3.25	1.45	1.3	.9	.8	.75	1.2
25.....	1.2	4.52	1.6	2.1	2.6	2.95	1.45	1.3	.9	.8	.75	1.25
26.....	1.2	3.3	1.58	2.0	3.2	2.9	1.4	1.3	.9	.8	.75	1.3
27.....	1.25	2.8	1.55	3.45	3.6	2.65	1.4	1.25	.9	.8	.75	1.3
28.....	1.25	2.78	1.55	3.15	4.05	2.45	1.4	1.25	.9	.8	.75	1.3
29.....	1.25	3.3	1.55	3.0	-----	2.35	1.45	1.2	.9	.8	.75	1.3
30.....	1.25	4.65	2.05	2.9	-----	2.3	1.8	1.2	.9	.8	.75	1.3
31.....	1.42	-----	1.88	3.1	-----	2.2	-----	1.2	-----	.8	.75	-----

NOTE.—No ice at this station.

Daily discharge, in second-feet, of Little Butte Creek near Eagle Point, Oreg., for 1907-1910

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1907.				1907.				1907.			
1.....		52	112	11.....		93	77	21.....	70	70	77
2.....		52	102	12.....		93	77	22.....	70	70	77
3.....		52	85	13.....	77	85	77	23.....	70	70	77
4.....		52	85	14.....	76	85	77	24.....	70	129	77
5.....		52	85	15.....	76	85	77	25.....	63	108	77
6.....		52	77	16.....	76	85	77	26.....	63	85	77
7.....		52	77	17.....	76	77	77	27.....	63	85	102
8.....		88	77	18.....	76	77	77	28.....	63	77	102
9.....	117	77	77	19.....	76	77	77	29.....	58	77	93
10.....	101	77	77	20.....	70	70	77	30.....	58	77	85
								31.....	58	77	77

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	117	102	136	428	162	283	267	226	267	66	43	43
2.....	124	117	124	370	136	190	300	196	267	63	43	43
3.....	112	124	124	316	136	157	316	190	251	63	43	43
4.....	112	124	124	351	112	149	316	190	251	63	43	43
5.....	112	112	124	323	596	131	351	226	251	63	43	43
6.....	112	112	124	383	408	112	351	251	251	63	43	43
7.....	112	112	124	245	220	112	351	316	226	63	43	43
8.....	112	108	124	251	162	112	370	316	205	63	43	43
9.....	112	108	112	750	370	112	370	300	184	63	43	43
10.....	112	108	112	473	351	112	358	300	176	63	43	43
11.....	112	108	124	370	283	112	351	283	157	63	43	43
12.....	112	108	416	334	283	190	220	309	149	63	43	43
13.....	112	108	975	351	220	236	220	316	136	63	43	43
14.....	102	108	450	1,730	220	267	283	316	112	63	43	43
15.....	102	93	283	750	190	300	388	587	112	58	43	43
16.....	102	93	184	408	190	351	775	610	112	54	43	63
17.....	93	93	162	388	162	473	726	541	112	52	43	58
18.....	93	93	162	388	136	408	726	900	112	52	43	58
19.....	93	93	236	408	136	300	703	850	112	52	43	77
20.....	93	124	229	750	136	332	647	750	112	52	43	77
21.....	93	162	220	610	112	351	601	703	102	52	43	77
22.....	93	141	1,630	564	112	351	564	656	102	52	43	77
23.....	93	136	2,730	388	112	351	518	703	93	52	43	77
24.....	93	136	1,060	283	136	388	473	587	93	52	43	77
25.....	93	136	1,110	220	136	370	428	518	93	52	43	77
26.....	93	124	3,890	162	112	334	351	473	93	52	43	77
27.....	102	124	1,600	162	112	316	334	334	93	52	43	77
28.....	102	124	800	162	112	283	316	316	85	52	43	77
29.....	102	136	633	162	267	283	290	300	80	48	43	77
30.....	102	136	587	162	.....	251	267	300	77	48	43	77
31.....	102	.....	473	162	.....	251	.....	283	.....	48	43	.....

Daily discharge, in second-feet, of Little Butte Creek near Eagle Point, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	77	112	473	149	283	703	251	162	136	63	43	48
2.....	77	112	450	136	283	800	251	162	136	63	43	48
3.....	77	108	437	149	1,450	564	290	162	124	63	43	48
4.....	77	102	388	205	975	428	251	162	124	63	43	48
5.....	77	102	388	3,450	564	428	236	162	149	58	43	48
6.....	77	102	370	1,120	388	428	236	162	124	58	43	48
7.....	77	93	358	1,420	825	408	236	162	112	58	43	48
8.....	77	93	344	2,620	1,000	388	236	162	112	58	43	48
9.....	77	93	334	1,760	800	388	220	162	112	58	43	48
10.....	77	93	316	1,060	703	381	220	162	112	58	43	48
11.....	77	93	316	573	564	370	220	162	112	52	43	48
12.....	77	93	473	351	518	370	220	162	112	48	43	48
13.....	77	93	420	267	518	370	220	162	102	48	43	63
14.....	77	93	388	3,220	473	370	205	220	102	48	43	48
15.....	619	93	351	3,370	473	370	190	205	102	48	43	48
16.....	573	124	316	2,200	1,150	351	190	196	102	48	43	48
17.....	518	112	267	2,100	750	351	220	190	93	48	43	48
18.....	464	112	176	1,570	1,480	344	214	184	93	48	43	48
19.....	370	112	102	1,730	726	334	205	176	93	48	43	48
20.....	309	370	124	3,240	900	334	196	162	93	48	43	48
21.....	257	316	102	2,100	900	334	190	162	85	48	43	48
22.....	226	875	102	1,900	750	323	190	162	85	48	43	48
23.....	205	656	437	1,210	610	316	190	149	85	48	43	48
24.....	205	750	220	850	564	309	176	149	85	48	43	48
25.....	190	610	157	703	496	300	176	149	85	48	43	58
26.....	176	564	464	518	473	300	176	149	77	48	43	58
27.....	168	564	257	450	450	283	176	149	77	48	43	58
28.....	162	555	408	351	656	283	176	141	77	43	43	58
29.....	149	527	245	316	.....	267	162	136	63	43	43	93
30.....	149	518	190	316	.....	267	162	136	63	43	43	93
31.....	136	.....	162	283	.....	251	.....	136	.....	43	48	.....
1909-10.												
1.....	112	136	810	236	825	825	370	236	93	52	43	40
2.....	112	112	680	190	800	900	316	220	85	52	43	40
3.....	112	102	656	176	726	1,330	316	220	85	52	43	40
4.....	112	93	610	162	680	1,240	283	205	85	43	40	40
5.....	102	93	541	162	656	1,180	283	190	77	43	40	40
6.....	102	93	633	162	587	1,150	283	190	77	43	40	40
7.....	102	93	726	149	541	1,120	267	190	77	43	40	40
8.....	93	93	1,390	149	450	1,120	267	162	77	43	40	40
9.....	93	93	680	136	428	1,060	251	162	63	43	40	40
10.....	93	93	656	136	428	1,000	251	251	63	43	40	40
11.....	93	93	680	136	518	925	251	236	63	43	40	40
12.....	93	93	975	136	450	875	251	220	63	43	40	40
13.....	93	117	726	162	388	850	251	205	63	43	40	40
14.....	93	112	573	162	473	800	220	190	63	43	40	40
15.....	93	102	518	149	428	800	220	176	63	43	40	40
16.....	93	102	428	149	388	750	220	176	63	43	40	40
17.....	93	117	428	136	450	750	205	162	63	43	40	40
18.....	93	408	388	136	875	703	190	162	63	43	40	43
19.....	93	750	388	136	703	680	190	136	63	43	40	63
20.....	93	2,160	351	124	518	656	162	136	63	58	40	93
21.....	93	1,830	309	124	473	1,360	162	136	63	52	40	93
22.....	93	2,920	257	112	428	1,450	162	124	58	52	40	93
23.....	93	3,890	226	112	428	1,090	149	124	58	43	40	93
24.....	93	2,520	190	112	850	875	149	112	52	43	40	93
25.....	93	1,610	190	351	564	726	149	112	52	43	40	102
26.....	93	900	184	316	850	703	136	112	52	43	40	112
27.....	102	656	176	975	1,060	587	136	102	52	43	40	112
28.....	102	647	176	825	1,330	496	136	102	52	43	40	112
29.....	102	900	176	750	.....	450	149	93	52	43	40	112
30.....	102	1,700	334	703	.....	428	251	93	52	43	40	112
31.....	141	.....	277	800	.....	388	.....	93	.....	43	40	.....

NOTE.—Daily discharge determined from a rating curve well defined between 40 and 400 second-feet.

Monthly discharge of Little Butte Creek near Eagle Point, Oreg., for 1907-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
July 13-31.....	77	58	68.9	2,600	B.
August.....	129	52	78.1	4,800	B.
September.....	112	77	82.2	4,890	B.
1907-8.					
October.....	124	93	104	6,400	B.
November.....	162	93	117	6,960	B.
December.....	3,890	112	619	38,100	B.
January.....	1,730	162	410	25,200	B.
February.....	596	112	201	11,600	A.
March.....	473	112	257	15,800	A.
April.....	775	220	418	24,900	A.
May.....	900	190	424	26,100	A.
June.....	267	77	149	8,870	A.
July.....	66	48	56.9	3,500	B.
August.....	43	43	43.0	2,640	B.
September.....	77	43	56.4	3,360	B.
The year.....	3,890	43	238	173,000	
1908-9.					
October.....	619	79	192	11,800	B.
November.....	875	93	275	16,400	B.
December.....	473	102	308	18,900	B.
January.....	3,450	136	1,280	78,700	C.
February.....	1,480	283	704	39,100	B.
March.....	800	251	378	23,200	A.
April.....	290	162	209	12,400	A.
May.....	220	136	163	10,000	A.
June.....	149	63	101	6,010	A.
July.....	63	43	51.4	3,160	B.
August.....	48	43	43.2	2,660	B.
September.....	93	48	52.8	3,140	B.
The year.....	3,450	43	313	225,000	
1909-10.					
October.....	141	93	99.0	6,090	A.
November.....	3,890	93	754	44,900	C.
December.....	1,390	176	495	30,400	B.
January.....	975	112	267	16,400	A.
February.....	1,330	388	618	34,300	B.
March.....	1,450	388	880	54,100	B.
April.....	370	136	221	13,200	A.
May.....	251	93	162	9,960	A.
June.....	93	52	65.2	3,880	A.
July.....	58	43	44.9	2,760	A.
August.....	43	40	40.2	2,470	A.
September.....	112	40	62.8	3,800	A.
The year.....	3,890	40	309	222,000	

BEAR CREEK AT TALENT, OREG.

Location.—In sec. 23, T. 38 S., R. 1 W., at the highway bridge half a mile northeast of Talent and half a mile below Wagner Creek.

Records presented.—July 11, 1907, to September 30, 1910.

Drainage area.—226 square miles.¹

Gage.—Vertical staff.

Channel.—Sand and gravel; shifting.

Discharge measurements.—Made from highway bridge or by wading near gage.

Diversions.—Most of the low-water flow diverted for irrigation above station.

Accuracy.—Records fair.

¹ 212 square miles used in previous reports.

Discharge measurements of Bear Creek at Talent, Oreg., in 1907-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1907.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 11 ^a	J. C. Stevens.....	2.27	18	Sept. 10 ^a	H. Kimble.....	2.85	2.3
Aug. 30 ^b	C. E. Ellsworth.....	2.26	9	Nov. 15	H. D. McGlashan.....	3.10	19
Sept. 10 ^b	.....do.....	2.48	11	Dec. 29	H. Kimble.....	3.20	43
Nov. 2 ^b	.....do.....	2.90	24				
1908.				1910.			
Feb. 11	C. E. Ellsworth.....	3.78	137	Aug. 19	Heintzleman and Ebert	3.32	c.5
May 12	.....do.....	3.55	115				

^a Measured by wading.
^b Measurements made by wading below headgate of canal. The estimated flow in the canal of 10-second feet has been added in constructing the curve.
^c Estimated.

Daily gage height, in feet, of Bear Creek at Talent, Oreg., for 1907-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1907.				1907.				1907.			
1.....		2.34	3.00	11.....	2.27	2.60	.....	21.....	2.50	2.40	.....
2.....		2.20	2.90	12.....	2.27	2.55	.....	22.....	2.40	2.30	.....
3.....		2.10	2.85	13.....	2.40	2.55	.....	23.....	2.30	2.30	.....
4.....		2.20	2.70	14.....	2.40	2.50	.....	24.....	2.30	2.90	.....
5.....		2.20	2.70	15.....	2.45	2.50	.....	25.....	2.30	2.80	.....
6.....		2.20	2.70	16.....	2.60	2.50	.....	26.....	2.30	2.70	.....
7.....		2.20	2.70	17.....	2.60	2.50	.....	27.....	2.30	2.60	.....
8.....		2.60	2.70	18.....	2.55	2.50	.....	28.....	2.40	2.50	.....
9.....		2.70	.....	19.....	2.55	2.50	.....	29.....	2.50	2.35	.....
10.....		2.70	2.48	20.....	2.50	2.30	.....	30.....	2.50	2.26	.....
								31.....	2.40	2.25	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	2.60	2.70	2.90	3.8	3.6	3.7	3.6	3.45	3.4	3.1	2.9	2.9
2.....	2.70	2.95	2.90	3.65	3.6	3.6	3.6	3.5	3.45	3.2	2.9	2.9
3.....	2.60	2.85	2.90	3.6	3.6	3.6	3.6	3.5	3.45	3.2	2.9	2.9
4.....	2.50	2.80	2.90	3.6	3.6	3.6	3.6	3.5	3.4	3.2	2.9	2.85
5.....	2.50	2.80	2.95	3.5	3.6	3.6	3.6	3.5	3.4	3.2	2.85	2.85
6.....	2.45	2.80	2.90	3.5	3.7	3.6	3.6	3.5	3.4	3.2	2.85	2.85
7.....	2.45	3.00	2.95	3.5	3.8	3.6	3.55	3.5	3.4	3.15	2.85	2.85
8.....	2.40	2.80	2.90	3.5	3.8	3.6	3.55	3.45	3.4	3.15	2.85	2.85
9.....	2.40	2.90	2.90	4.1	3.6	3.6	3.55	3.45	3.4	3.15	2.9	2.8
10.....	2.40	2.80	2.95	3.7	3.6	3.6	3.55	3.45	3.4	3.15	2.9	2.8
11.....	2.40	2.70	3.05	3.65	3.6	3.6	3.6	3.5	3.5	3.15	2.9	2.8
12.....	2.55	2.70	3.10	3.65	3.6	3.6	3.6	3.5	3.4	3.15	2.9	2.8
13.....	2.45	2.70	3.55	3.7	3.6	3.6	3.7	3.5	3.4	3.2	2.9	2.8
14.....	2.60	2.80	3.10	5.0	3.6	3.6	3.7	3.5	3.35	3.2	2.9	2.8
15.....	2.60	2.90	2.95	4.3	3.7	3.6	4.05	3.65	3.35	3.2	2.9	2.9
16.....	2.50	2.80	2.80	4.1	3.7	4.2	4.0	3.75	3.35	3.1	2.9	2.9
17.....	2.50	2.90	2.80	4.0	3.7	3.9	3.8	3.85	3.4	3.1	2.9	2.9
18.....	2.45	2.90	2.80	4.0	3.65	3.85	3.75	4.05	3.4	3.1	2.85	2.9
19.....	2.45	2.90	2.90	4.0	3.65	3.8	3.7	3.85	3.4	3.05	2.85	2.9
20.....	2.40	3.00	2.90	4.6	3.6	3.8	3.7	3.8	3.4	3.0	2.85	2.9
21.....	2.45	3.10	2.90	4.3	3.6	3.8	3.75	3.8	3.4	3.0	2.8	2.9
22.....	2.45	3.00	3.80	4.1	3.6	3.7	3.75	3.8	3.35	3.0	2.8	2.9
23.....	2.45	3.00	4.00	4.0	3.6	3.7	3.7	3.65	3.3	3.0	2.8	2.9
24.....	2.60	3.00	3.60	4.05	3.6	3.7	3.75	3.6	3.3	3.0	2.8	2.95
25.....	2.60	3.00	3.50	3.9	3.6	3.7	3.7	3.55	3.3	3.0	2.85	2.95
26.....	2.60	3.00	5.80	3.85	3.6	3.7	3.6	3.5	3.25	2.95	2.9	2.95
27.....	2.60	3.00	4.40	3.8	3.65	3.7	3.6	3.5	3.2	2.95	2.9	2.95
28.....	2.85	3.00	3.90	3.7	3.65	3.65	3.55	3.45	3.2	2.95	2.9	2.95
29.....	2.80	3.00	3.70	3.7	3.65	3.65	3.55	3.45	3.2	2.95	2.9	2.95
30.....	2.80	3.00	3.60	3.7	.....	3.6	3.5	3.45	3.2	2.9	2.9	2.95
31.....	2.80	.....	3.80	3.6	.....	3.6	.....	3.45	.....	2.9	2.9	.....

Daily gage height, in feet, of Bear Creek at Talent, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	2.95	3.2	3.2	3.2	4.5	4.7	4.55	4.3	4.25	3.7	3.3	3.3
2.....	3.0	3.2	3.15	3.2	4.65	4.65	4.4	4.4	4.2	3.7	3.3	3.3
3.....	3.0	3.2	3.15	3.4	5.8	4.7	4.55	4.45	4.2	3.7	3.3	3.3
4.....	3.0	3.2	3.15	3.4	4.1	4.75	4.4	4.35	4.2	3.7	3.3	3.25
5.....	3.0	3.2	3.15	3.45	5.0	4.75	4.4	4.3	4.25	3.75	3.3	3.2
6.....	3.0	3.2	3.15	5.4	4.9	4.85	4.4	4.2	4.2	3.8	3.3	3.2
7.....	3.0	3.2	3.15	5.75	4.85	4.85	4.35	4.2	4.15	3.8	3.3	3.2
8.....	3.0	3.2	3.15	5.95	4.8	4.85	4.3	4.25	4.15	3.8	3.3	3.2
9.....	3.0	3.2	3.15	4.5	4.7	4.8	4.4	4.3	4.15	3.75	3.3	3.2
10.....	3.0	3.2	3.15	4.1	4.7	4.7	4.4	4.25	4.1	3.7	3.3	3.3
11.....	3.0	3.2	3.15	4.0	4.8	4.6	4.4	4.2	4.05	3.7	3.3	3.3
12.....	3.0	3.2	3.15	3.7	5.1	4.5	4.35	4.2	4.0	3.7	3.3	3.25
13.....	3.0	3.15	3.15	3.7	5.0	4.45	4.35	4.2	4.0	3.65	3.3	3.25
14.....	3.7	3.1	3.15	7.2	4.8	4.4	4.35	4.15	4.0	3.65	3.3	3.25
15.....	3.45	3.1	3.15	5.2	4.85	4.4	4.35	4.25	4.0	3.6	3.3	3.25
16.....	3.25	3.08	3.15	6.0	5.0	4.4	4.35	4.2	4.1	3.6	3.3	3.2
17.....	3.25	3.1	3.1	6.3	5.9	4.5	4.4	4.15	4.1	3.6	3.25	3.2
18.....	3.2	3.1	3.1	5.1	5.75	4.5	4.4	4.15	4.05	3.55	3.25	3.2
19.....	3.2	3.1	3.1	5.7	5.4	4.5	4.4	4.15	4.0	3.5	3.2	3.2
20.....	3.2	3.5	3.1	5.4	5.3	4.5	4.4	4.1	4.0	3.5	3.2	3.2
21.....	3.15	3.35	3.1	6.9	5.1	4.4	4.4	4.1	4.0	3.5	3.2	3.2
22.....	3.15	3.35	3.15	6.0	4.95	4.5	4.35	4.1	4.0	3.45	3.2	3.2
23.....	3.1	3.3	3.15	5.4	4.9	4.4	4.3	4.05	3.95	3.4	3.2	3.2
24.....	3.1	3.3	3.2	5.0	5.0	4.4	4.3	4.05	3.9	3.4	3.35	3.15
25.....	3.1	3.3	3.2	4.9	4.85	4.5	4.25	4.0	3.85	3.4	3.2	3.35
26.....	3.1	3.25	3.2	4.8	4.85	4.4	4.4	4.0	3.8	3.4	3.2	3.45
27.....	3.1	3.2	3.2	4.7	4.8	4.4	4.3	4.15	3.75	3.4	3.2	3.4
28.....	3.1	3.2	3.2	4.6	4.8	4.4	4.3	4.4	3.8	3.55	3.2	3.35
29.....	3.1	3.2	3.2	4.5	-----	4.5	4.3	4.3	3.75	3.3	3.15	3.35
30.....	3.1	3.2	3.2	4.5	-----	4.5	4.25	4.2	3.75	3.3	3.2	3.4
31.....	3.1	-----	3.2	4.5	-----	4.5	-----	4.3	-----	3.3	3.25	-----
1909-10.												
1.....	3.4	3.85	4.5	4.0	4.55	5.25	4.5	4.2	3.7	3.6	3.4	3.3
2.....	3.4	3.75	4.3	3.95	4.5	5.15	4.5	4.2	3.7	3.6	3.4	3.3
3.....	3.4	3.7	4.25	3.9	4.4	5.1	4.45	4.3	3.7	3.6	3.35	3.3
4.....	3.4	3.6	4.2	4.5	4.35	5.0	4.4	4.3	3.7	3.6	3.35	3.3
5.....	3.4	3.6	4.2	4.5	4.25	4.95	4.4	4.3	3.7	3.6	3.3	3.3
6.....	3.4	3.6	4.25	4.0	4.25	4.9	4.4	4.3	3.7	3.55	3.3	3.3
7.....	3.4	3.6	4.2	4.0	4.25	4.8	4.4	4.3	3.7	3.55	3.3	3.3
8.....	3.4	3.6	4.9	4.0	4.2	4.7	4.4	4.25	3.7	3.55	3.3	3.3
9.....	3.4	3.6	5.4	4.0	4.2	4.7	4.4	4.3	3.65	3.55	3.25	3.3
10.....	3.4	3.6	5.0	4.0	4.2	4.7	4.35	4.3	3.6	3.55	2.25	3.3
11.....	3.4	3.55	4.5	4.0	4.2	4.7	4.3	4.2	3.6	3.55	3.25	3.3
12.....	3.4	3.55	4.6	3.95	4.2	4.7	4.3	4.2	3.65	3.55	3.25	3.4
13.....	3.4	3.6	4.7	3.95	4.2	4.7	4.3	4.2	3.65	3.5	3.2	3.45
14.....	3.4	3.65	4.55	3.95	4.25	4.7	4.3	4.1	3.65	3.5	3.3	3.45
15.....	3.4	3.6	4.4	4.0	4.2	4.65	4.3	4.05	3.65	3.45	3.3	3.4
16.....	3.4	3.6	4.4	4.0	4.15	4.6	4.3	4.05	3.75	3.4	3.3	3.4
17.....	3.4	3.6	4.3	4.0	4.25	4.6	4.25	4.0	3.7	3.4	3.3	3.4
18.....	3.45	3.75	4.2	4.0	4.45	4.65	4.2	3.95	3.7	3.4	3.3	3.5
19.....	3.5	3.85	4.2	4.0	4.5	4.65	4.2	3.95	3.7	3.4	3.3	3.5
20.....	3.5	5.1	4.2	4.0	4.5	4.65	4.3	3.95	3.7	3.4	3.3	3.5
21.....	3.5	5.1	4.15	4.2	4.4	4.65	4.25	3.95	3.7	3.4	3.3	3.5
22.....	3.5	5.1	4.1	4.6	4.35	4.7	4.25	3.95	3.75	3.4	3.3	3.5
23.....	3.5	5.7	4.0	5.0	4.35	4.7	4.2	3.9	3.7	3.4	3.3	3.5
24.....	3.45	5.1	4.0	5.0	6.0	4.7	4.2	3.95	3.7	3.4	3.3	3.5
25.....	3.45	4.5	4.0	5.0	5.35	4.7	4.15	4.0	3.7	3.4	3.3	3.45
26.....	3.45	4.5	4.0	4.6	4.95	4.7	4.15	4.0	3.65	3.4	3.35	3.45
27.....	3.45	4.4	4.0	4.35	5.0	4.6	4.1	4.0	3.6	3.4	3.35	3.45
28.....	3.45	4.5	4.0	4.7	5.05	4.6	4.15	4.0	3.6	3.4	3.55	3.45
29.....	3.4	4.75	4.0	4.5	-----	4.6	4.2	3.9	3.6	3.4	3.3	3.45
30.....	3.4	4.75	4.2	4.6	-----	4.55	4.3	3.85	3.6	3.4	3.3	3.45
31.....	3.85	-----	4.5	4.6	-----	4.5	-----	3.8	-----	3.	3.3	-----

NOTE.—No ice at this station.

Daily discharge, in second-feet, of Bear Creek at Talent, Oreg., for 1907-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1907.				1907.				1907.			
1.....		19	47	11.....	17	26		21.....	23	20	
2.....		16	41	12.....	17	24		22.....	20	18	
3.....		14	38	13.....	20	24		23.....	18	18	
4.....		16	30	14.....	20	23		24.....	18	41	
5.....		16	30	15.....	22	23		25.....	18	35	
6.....		16	30	16.....	26	23		26.....	18	30	
7.....		16	30	17.....	26	23		27.....	18	26	
8.....		26	30	18.....	24	23		28.....	20	23	
9.....		30	26	19.....	24	23		29.....	23	19	
10.....		30	22	20.....	23	18		30.....	23	17	
								31.....	20	17	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	26	30	41	157	112	134	112	81	72	24	6	6
2.....	30	44	41	123	112	112	112	90	81	38	6	6
3.....	26	38	41	112	112	112	112	90	81	38	6	6
4.....	23	35	41	112	112	112	112	90	72	38	6	4
5.....	23	35	44	90	112	112	112	50	72	38	4	4
6.....	22	35	41	90	134	112	112	90	72	38	4	4
7.....	22	47	44	90	157	112	101	90	72	31	4	4
8.....	20	35	41	90	157	112	101	81	72	31	4	4
9.....	20	41	41	231	112	112	101	81	72	31	6	2
10.....	20	35	44	134	112	112	101	81	72	31	6	2
11.....	20	30	50	123	112	112	112	90	90	31	6	2
12.....	24	30	54	123	112	112	112	90	72	31	6	2
13.....	22	30	97	134	112	112	134	90	72	38	6	2
14.....	26	35	54	500	112	112	134	90	63	38	6	2
15.....	26	41	44	285	134	112	218	123	63	38	6	6
16.....	23	35	35	231	134	258	205	146	63	24	6	6
17.....	23	41	35	205	134	180	157	168	72	24	6	6
18.....	22	41	35	205	123	168	146	218	72	24	4	6
19.....	22	41	41	205	123	157	134	168	72	19	4	6
20.....	20	47	41	372	112	157	134	157	72	14	4	6
21.....	22	54	41	285	112	157	146	157	72	14	2	6
22.....	22	47	131	231	112	134	146	157	63	14	2	6
23.....	22	47	165	205	112	134	134	123	54	14	2	6
24.....	26	47	103	218	112	134	146	112	54	14	2	10
25.....	26	47	91	180	112	134	134	101	54	14	4	10
26.....	26	47	650	168	112	134	112	90	46	10	6	10
27.....	26	47	250	157	123	134	112	90	38	10	6	10
28.....	38	47	147	134	123	123	101	81	38	10	6	10
29.....	35	47	117	134	123	123	101	81	38	10	6	10
30.....	35	47	103	134		112	90	81	38	6	6	10
31.....	35		131	112		112		81		6	6	

Daily discharge, in second-feet, of Bear Creek at Talent Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	10	38	38	38	182	232	194	137	126	25	3	3
2.....	14	38	31	38	219	219	159	159	115	25	3	3
3.....	14	38	31	72	566	232	194	170	115	25	3	3
4.....	14	38	31	72	95	246	159	148	115	25	3	2
5.....	14	38	31	81	315	246	159	137	126	32	3	1
6.....	14	38	31	640	287	273	159	115	115	40	3	1
7.....	14	38	31	765	273	273	148	115	105	40	3	1
8.....	14	38	31	845	259	273	137	126	105	40	3	1
9.....	14	38	31	342	232	259	159	137	105	32	3	1
10.....	14	38	31	231	232	232	159	126	95	25	3	3
11.....	14	38	31	205	259	206	159	115	85	25	3	3
12.....	14	38	31	134	344	182	148	115	75	25	3	2
13.....	14	31	31	134	315	170	148	115	75	20	3	2
14.....	134	24	31	1,380	259	159	148	105	75	24	3	2
15.....	81	24	31	374	273	159	148	126	75	15	3	2
16.....	46	22	31	634	315	159	148	115	95	15	3	1
17.....	46	24	24	736	600	182	159	105	95	15	2	1
18.....	38	24	24	344	550	182	159	105	85	12	2	1
19.....	38	24	24	533	436	182	159	105	75	8	2	1
20.....	38	90	24	436	405	182	159	95	75	8	1	1
21.....	31	63	24	950	344	159	159	95	75	8	1	1
22.....	31	63	31	634	301	182	148	95	75	6	1	1
23.....	24	54	31	436	287	159	137	85	66	5	1	1
24.....	24	54	38	315	315	159	137	85	57	5	4	.5
25.....	24	54	38	287	273	182	126	75	48	5	1	4
26.....	24	46	38	259	273	159	159	75	40	5	1	6
27.....	24	38	38	232	259	159	137	105	32	5	1	5
28.....	24	38	38	206	259	159	137	159	40	4	1	4
29.....	24	38	38	182	.....	182	137	137	32	3	.5	4
30.....	24	38	38	182	.....	182	126	115	32	3	1	5
31.....	24	.....	38	182	.....	182	.....	137	.....	3	2	.....
1909-10.												
1.....	5	48	182	75	194	390	182	115	25	13	2	0
2.....	5	32	137	66	182	359	182	115	25	13	2	0
3.....	5	25	126	57	159	344	170	137	25	13	1	0
4.....	5	15	115	182	148	315	159	137	25	13	1	0
5.....	5	15	115	182	126	301	159	137	25	13	0	0
6.....	5	15	126	75	126	287	159	137	25	9.5	0	0
7.....	5	15	115	75	126	259	159	137	25	9.5	0	0
8.....	5	15	287	75	115	232	159	126	25	9.5	0	0
9.....	5	15	436	75	115	232	159	137	19	9.5	0	0
10.....	5	15	315	75	115	232	148	137	13	9.5	0	0
11.....	5	12	182	75	115	232	137	115	13	9.5	0	0
12.....	5	12	206	66	115	232	137	115	19	9.5	0	2
13.....	5	15	232	66	115	232	137	115	19	6	0	4
14.....	5	20	194	66	126	232	137	95	19	6	0	4
15.....	5	15	159	75	115	219	137	85	19	4	0	2
16.....	5	15	159	75	105	206	137	85	32	2	0	2
17.....	5	15	137	75	126	206	126	75	25	2	0	2
18.....	6	32	115	75	170	219	115	66	25	2	0	6
19.....	8	48	115	75	182	219	115	66	25	2	0	6
20.....	8	344	115	75	182	219	137	66	25	2	0	6
21.....	8	344	105	115	159	219	126	66	25	2	0	6
22.....	8	344	95	206	148	232	126	66	32	2	0	6
23.....	8	533	75	315	148	232	115	57	25	2	0	6
24.....	6	344	75	315	634	232	115	66	25	2	0	6
25.....	6	182	75	315	420	232	105	75	25	2	0	4
26.....	6	182	75	206	301	232	105	75	19	2	1	4
27.....	6	159	75	148	315	206	95	75	13	2	1	4
28.....	6	182	75	232	330	206	105	75	13	2	1	4
29.....	5	246	75	182	.....	206	115	57	13	2	0	4
30.....	5	246	115	206	.....	194	137	48	13	2	0	4
31.....	48	.....	182	206	.....	182	.....	40	.....	2	0	.....

NOTE.—Daily discharge determined by rating curves applicable as follows: 1907, poorly defined, last 10 days probably too small; Jan. 1, 1908, to Jan. 14, 1909, fairly well defined below 150 second-feet; Jan. 15 to Dec. 31, 1909, poorly defined below and fairly well above about 10 second-feet; 1910, fairly well defined.

Monthly discharge of Bear Creek at Talent, Oreg., for 1907-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
July 11-31.....	26	17	20.9	871	C.
August.....	41	14	22.4	1,380	C.
September 1-10.....	47	22	32.4	643	C.
1907-8.					
October.....	38	20	24.9	1,530	C.
November.....	54	30	40.8	2,430	C.
December.....	650	35	91.4	5,620	C.
January.....	500	90	180	11,100	C.
February.....	157	112	120	6,900	C.
March.....	258	112	131	8,060	C.
April.....	218	90	126	7,500	C.
May.....	218	81	108	6,640	C.
June.....	90	38	64.8	3,860	C.
July.....	38	6	23.9	1,470	C.
August.....	6	2	4.97	306	D.
September.....	10	2	5.80	345	D.
The year.....	650	2	76.8	55,800	
1908-9.					
October.....	134	10	28.3	1,740	C.
November.....	90	22	40.2	2,390	C.
December.....	38	24	31.9	1,960	C.
January.....	1,380	38	384	23,600	C.
February.....	600	95	312	17,300	C.
March.....	273	159	197	12,100	C.
April.....	194	126	152	9,040	C.
May.....	170	75	117	7,190	C.
June.....	126	32	81.0	4,820	C.
July.....	40	3	16.9	1,040	C.
August.....	4	.5	2.24	138	D.
September.....	6	.5	2.22	132	D.
The year.....	1,380	.5	113	81,400	
1909-10.					
October.....	48	5	7.1	437	D.
November.....	533	15	117	6,960	C.
December.....	436	75	148	9,100	C.
January.....	315	57	132	8,120	C.
February.....	634	105	186	10,300	C.
March.....	390	182	243	14,900	B.
April.....	182	95	136	8,090	B.
May.....	137	40	93.5	5,750	B.
June.....	32	13	21.9	1,300	C.
July.....	13	2	5.79	356	C.
August.....	2	0	.29	18	D.
September.....	6	0	2.53	151	C.
The year.....	634	0	90.6	65,500	

APPLEGATE RIVER AT MURPHY, OREG.

Location.—In sec. 19, T. 37 S., R. 5 W., 250 feet below county highway bridge at Murphy, 8 miles above the mouth of the stream.

Records presented.—July 22, 1907, to September 30, 1910.

Drainage area.—595 square miles.

Gage.—Vertical staff on right bank.

Channel.—Sand and gravel; shifting.

Discharge measurements.—Made from highway bridge or by wading.

Accuracy.—Discharge relation affected by a brush dam below the gage; records unsatisfactory; no estimates made for 1909 and 1910.

Discharge measurements of Applegate River at Murphy, Oreg., in 1907-8, 1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1907.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
July 22	H. D. McGlashan.....	4.17	163	May 1	C. E. Ellsworth.....	4.94	680
Aug. 29	C. E. Ellsworth.....	4.23	75	Sept. 13	H. Kimble.....	4.50	46
Sept. 11	do.....	4.28	78	Nov. 11	H. D. McGlashan.....	4.41	148
Oct. 29	do.....	4.25	114	Dec. 30	H. Kimble.....	4.90	497
1908.				1910.			
Feb. 8	C. E. Ellsworth.....	5.45	1,320	Aug. 26	F. C. Ebert.....	4.5	20.8
Mar. 11	do.....	5.10	910	Sept. 24	B. F. Heintzleman.....	5.1	31.4

Daily gage height, in feet, of Applegate River at Murphy, Oreg., for 1907-1910.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	
1907.				1907.				1907.				
1.....	4.40	4.35	4.35	11.....	4.70	4.28	4.28	21.....	4.17	4.25	4.35	
2.....	4.45	4.40	4.40	12.....	4.55	4.28	4.28	22.....	4.10	4.20	4.34	
3.....	4.40	4.40	4.40	13.....	4.50	4.28	4.28	23.....	4.10	4.20	4.33	
4.....	4.40	4.40	4.40	14.....	4.45	4.27	4.27	24.....	4.14	4.20	4.32	
5.....	4.40	4.40	4.40	15.....	4.40	4.27	4.27	25.....	4.10	4.20	4.31	
6.....	4.40	4.40	4.40	16.....	4.40	4.29	4.29	26.....	4.20	4.20	4.30	
7.....	4.50	4.40	4.40	17.....	4.35	4.30	4.30	27.....	4.16	4.30	4.27	
8.....	4.60	4.35	4.35	18.....	4.30	4.31	4.31	28.....	4.40	4.30	4.25	
9.....	4.95	4.35	4.35	19.....	4.30	4.33	4.33	29.....	4.45	4.30	4.27	
10.....	4.90	4.25	4.25	20.....	4.25	4.33	4.33	30.....	4.50	4.30	4.30	
								31.....	4.40	4.30	4.30	
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	4.35	4.35	4.35	5.65	4.95	5.10	4.95	5.20	4.90	4.65	4.58	4.47
2.....	4.35	4.40	4.35	5.50	4.90	5.09	4.92	5.22	4.88	4.60	4.60	4.45
3.....	4.35	4.38	4.32	5.35	4.88	5.10	4.90	5.12	4.86	4.57	4.59	4.48
4.....	4.35	4.35	4.40	5.28	4.85	5.05	4.90	5.00	4.82	4.57	4.57	4.50
5.....	4.35	4.35	4.58	5.18	4.88	5.00	4.90	5.02	4.85	4.60	4.56	4.50
6.....	4.32	4.30	4.50	5.12	6.00	4.98	4.90	5.05	4.90	4.57	4.55	4.50
7.....	4.32	4.30	4.50	5.08	5.60	4.95	4.87	5.10	4.95	4.56	4.52	4.50
8.....	4.30	4.28	4.60	5.12	5.48	4.95	4.87	5.05	5.12	4.50	4.50	4.50
9.....	4.27	4.28	4.62	6.05	5.58	4.98	4.90	5.00	5.20	4.47	4.50	4.50
10.....	4.25	4.25	4.65	5.75	5.42	5.10	4.94	4.95	5.20	4.46	4.50	4.50
11.....	4.20	4.22	5.00	5.48	5.40	5.10	4.95	5.00	5.20	4.45	4.50	4.50
12.....	4.10	4.20	5.50	5.40	5.35	5.15	5.30	4.95	5.20	4.43	4.50	4.50
13.....	4.10	4.20	5.72	5.40	5.25	5.22	5.33	4.92	5.20	4.40	4.50	4.50
14.....	4.10	4.20	5.12	5.50	5.20	5.30	5.30	4.91	5.20	4.40	4.50	4.50
15.....	4.10	4.20	5.00	5.60	5.18	5.45	5.42	4.90	5.17	4.40	4.50	4.50
16.....	4.10	4.22	4.80	5.50	5.18	5.65	5.47	4.87	5.05	4.37	4.50	4.50
17.....	4.10	4.22	4.80	5.42	5.12	5.80	5.30	4.90	5.02	4.35	4.50	4.50
18.....	4.10	4.25	4.80	5.35	5.10	5.58	5.50	5.20	4.98	4.32	4.50	4.50
19.....	4.10	4.28	4.82	5.35	5.09	5.42	5.60	5.05	4.93	4.30	4.50	4.50
20.....	4.10	4.32	4.82	6.20	5.05	5.30	5.50	5.00	4.90	4.75	4.50	4.55
21.....	4.10	4.40	4.78	5.80	5.00	5.18	5.40	4.95	4.97	4.75	4.47	4.60
22.....	4.10	4.40	5.88	5.60	4.98	5.20	5.35	4.90	4.90	4.73	4.45	4.60
23.....	4.12	4.40	6.00	5.50	4.95	5.20	5.32	5.00	4.85	4.71	4.43	4.60
24.....	4.15	4.40	5.95	5.40	4.92	5.20	5.30	5.00	4.80	4.70	4.42	4.62
25.....	4.15	4.40	5.90	5.30	4.90	5.20	5.27	5.00	4.80	4.69	4.43	4.64
26.....	4.15	4.40	9.52	5.20	4.90	5.19	5.20	4.97	4.78	4.68	4.45	4.65
27.....	4.17	4.45	6.60	5.15	4.92	5.18	5.20	4.95	4.76	4.67	4.47	4.65
28.....	4.20	4.42	6.00	5.10	4.98	5.18	5.13	4.92	4.74	4.66	4.48	4.65
29.....	4.25	4.40	5.80	5.05	4.98	5.00	5.13	5.00	4.71	4.64	4.50	4.20
30.....	4.25	4.38	5.85	5.02	4.95	4.95	5.12	4.95	4.68	4.62	4.50	4.15
31.....	4.30	4.30	5.85	4.98	4.92	4.92	4.90	4.90	4.60	4.48	4.48	4.15

Daily gage height, in feet, of Applegate River at Murphy, Oreg., for 1907-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	4.15	4.75	4.75	4.79	5.95	6.25	5.3	5.45	5.54	4.78	4.6	4.8
2.....	4.14	4.50	4.70	4.8	6.3	6.1	5.3	5.6	5.56	4.77	4.6	4.8
3.....	4.13	4.40	4.70	5.02	6.7	6.0	5.32	5.63	5.58	4.75	4.6	4.78
4.....	4.14	4.50	4.68	5.04	6.4	6.1	5.3	5.65	5.7	4.72	4.6	4.78
5.....	4.16	4.50	4.65	7.35	6.35	6.0	5.3	5.7	5.7	4.7	4.6	4.8
6.....	4.17	4.50	4.63	6.7	6.35	5.95	5.28	5.6	5.68	4.7	4.6	4.8
7.....	4.19	4.50	4.62	7.9	6.25	5.8	5.26	5.6	5.56	4.7	4.6	4.8
8.....	4.20	4.47	4.60	8.0	6.02	5.75	5.24	5.88	5.5	4.7	4.6	4.8
9.....	4.23	4.44	4.60	6.9	6.3	5.7	5.28	5.58	5.4	4.7	4.6	4.8
10.....	4.25	4.43	4.58	6.2	6.15	5.6	5.32	5.5	5.4	4.68	4.6	4.8
11.....	4.27	4.42	4.57	6.0	6.1	5.5	5.32	5.45	5.4	4.68	4.55	4.82
12.....	4.30	4.41	4.57	5.75	6.12	5.5	5.32	5.4	5.4	4.75	4.55	4.82
13.....	4.30	4.40	4.60	5.6	6.5	5.5	5.32	5.35	5.3	4.75	4.5	4.82
14.....	5.75	4.40	4.51	8.25	6.35	5.5	5.36	5.32	5.3	4.8	4.5	4.82
15.....	5.40	4.40	4.54	7.9	6.4	5.52	5.4	5.38	5.3	4.86	4.5	4.82
16.....	4.93	4.40	4.52	8.2	7.15	5.55	5.5	5.32	5.3	4.75	4.5	4.82
17.....	4.75	4.40	4.50	8.6	7.5	5.57	5.65	5.3	5.28	4.7	4.55	4.82
18.....	4.60	4.40	4.50	7.8	7.52	5.62	5.6	5.3	5.25	4.7	4.6	4.82
19.....	4.60	4.55	4.50	8.7	7.3	5.57	5.5	5.3	5.22	4.7	4.65	4.82
20.....	4.56	5.60	4.50	11.0	7.0	5.52	5.46	5.28	5.2	4.68	4.7	4.82
21.....	4.50	5.52	4.55	10.75	6.75	5.5	5.44	5.28	5.15	4.64	4.7	4.82
22.....	4.50	6.00	4.60	8.7	6.5	5.46	5.42	5.26	5.1	4.6	4.75	4.82
23.....	4.50	5.50	4.75	7.5	6.3	5.43	5.37	5.25	5.05	4.6	4.75	4.82
24.....	4.50	5.50	4.90	7.0	6.75	5.4	5.35	5.25	5.02	4.6	4.8	4.82
25.....	4.50	5.40	4.78	6.75	6.5	5.37	5.35	5.3	5.02	4.58	4.8	4.82
26.....	4.50	5.30	4.75	6.45	6.4	5.37	5.35	5.4	5.02	4.55	4.8	4.82
27.....	4.50	5.20	4.70	6.3	6.4	5.35	5.4	5.55	4.9	4.55	4.78	4.85
28.....	4.50	4.90	4.70	6.15	6.32	5.35	5.55	5.45	4.9	4.57	4.78	4.9
29.....	4.50	4.95	4.95	6.0	.....	5.38	5.5	5.38	4.85	4.6	4.78	4.95
30.....	4.60	4.80	4.88	6.0	.....	5.35	5.45	5.32	4.8	4.6	4.76	4.98
31.....	4.90	.....	4.80	5.98	.....	5.3	.....	5.5	.....	4.6	4.78	.....
1909-10.												
1.....	5.15	6.0	6.1	6.0	6.1	6.65	5.5	5.5	5.05	4.8	4.7	4.6
2.....	5.05	5.4	6.1	5.9	6.0	6.7	5.5	5.5	5.0	4.85	4.65	4.6
3.....	5.05	5.2	5.9	5.8	6.0	6.6	5.5	5.5	5.0	4.9	4.6	4.6
4.....	5.05	5.1	5.9	5.7	6.0	6.4	5.5	5.5	4.95	4.9	4.6	4.6
5.....	5.05	5.1	5.9	5.6	5.9	6.3	5.5	5.5	4.9	4.85	4.6	4.6
6.....	5.05	5.1	6.0	5.55	5.85	6.2	5.55	5.5	4.9	4.85	4.55	4.6
7.....	5.05	5.05	6.2	5.55	5.8	6.1	5.5	5.55	4.9	4.85	4.6	4.6
8.....	5.05	5.1	6.5	5.5	5.75	6.05	5.5	5.55	4.85	4.85	4.6	4.6
9.....	5.05	5.1	7.4	5.5	5.7	6.0	5.5	5.6	4.85	4.9	4.6	4.6
10.....	5.05	5.05	6.9	5.45	5.65	6.0	5.5	5.7	4.85	4.9	4.6	4.6
11.....	5.05	5.0	6.5	5.4	5.6	5.95	5.5	5.6	4.85	4.9	4.6	4.6
12.....	5.05	5.0	6.45	5.4	5.6	5.95	5.5	5.5	4.85	4.7	4.6	4.6
13.....	5.05	5.0	6.4	5.4	5.6	5.95	5.5	5.5	4.85	4.7	4.55	4.8
14.....	5.05	5.0	6.35	5.4	5.6	6.0	5.5	5.5	4.8	4.7	4.55	4.85
15.....	5.05	5.0	6.3	5.45	5.6	6.1	5.5	5.5	4.8	4.7	4.55	4.9
16.....	5.05	5.0	6.2	5.4	5.55	6.05	5.5	5.45	4.8	4.7	4.55	4.95
17.....	5.05	5.0	6.1	5.4	5.55	6.0	5.55	5.4	4.8	4.7	4.55	5.0
18.....	5.05	5.1	6.0	5.4	5.55	6.0	5.6	5.35	4.8	4.7	4.55	5.0
19.....	5.0	6.4	5.9	5.4	5.85	6.0	5.7	5.3	4.8	4.7	4.5	5.0
20.....	4.9	8.75	5.85	5.4	5.8	6.0	5.65	5.25	4.8	4.7	4.5	5.0
21.....	4.85	8.0	5.8	5.45	5.75	6.0	5.6	5.2	4.8	4.65	4.5	5.0
22.....	4.8	7.8	5.75	6.0	5.7	6.0	5.6	5.2	4.8	4.65	4.5	5.0
23.....	4.8	11.95	5.7	6.0	5.65	5.9	5.6	5.2	4.8	4.7	4.45	5.05
24.....	4.8	9.0	5.6	6.65	6.9	5.8	5.6	5.2	4.8	4.7	4.4	5.1
25.....	4.8	7.5	5.6	6.3	7.5	5.75	5.6	5.2	4.8	4.7	4.4	5.1
26.....	4.8	6.9	5.65	6.15	6.7	5.75	5.6	5.2	4.8	4.7	4.4	5.1
27.....	4.8	6.6	5.7	6.05	6.7	5.7	5.6	5.2	4.8	4.7	4.4	5.05
28.....	4.84	6.3	5.75	6.1	6.65	5.65	5.5	5.2	4.8	4.7	4.45	5.0
29.....	4.85	6.25	5.8	6.1	.....	5.6	5.5	5.2	4.8	4.7	4.5	5.0
30.....	4.9	6.2	5.85	6.15	.....	5.55	5.5	5.2	4.8	4.7	4.55	5.0
31.....	6.4	.....	6.1	6.2	.....	5.5	.....	5.15	.....	4.7	4.6	.....

NOTE.—No ice at this station. Gage heights are subject to error on account of backwater from the irrigation dam below the gage.

Daily discharge, in second-feet, of Applegate River at Murphy, Oreg., for 1907-8.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1907.				1907.				1907.			
1.....		142	118	11.....		332	88	21.....		77	118
2.....		170	142	12.....		228	88	22.....	163	59	114
3.....		142	142	13.....		197	88	23.....	135	59	109
4.....		142	142	14.....		170	84	24.....	151	59	104
5.....		142	142	15.....		142	84	25.....	135	59	100
6.....		142	142	16.....		142	91	26.....	175	59	95
7.....		197	142	17.....		118	95	27.....	159	95	84
8.....		260	118	18.....		95	100	28.....	142	95	77
9.....		544	118	19.....		95	109	29.....	170	95	84
10.....		497	77	20.....		77	109	30.....	197	95	95
								31.....	142	95	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	118	158	255	1,660	730	880	730	990	680	460	80	38
2.....	118	186	257	1,400	680	870	700	1,010	661	420	88	33
3.....	118	175	235	1,180	661	880	680	902	642	399	84	41
4.....	118	158	285	1,090	632	830	680	780	604	399	75	46
5.....	118	160	406	968	661	780	680	800	632	420	71	46
6.....	104	162	350	902	2,300	760	680	830	680	399	67	46
7.....	104	164	350	860	1,570	730	652	880	730	392	54	46
8.....	95	167	420	902	1,370	730	652	830	902	350	46	46
9.....	84	169	436	2,400	1,540	760	680	780	990	330	46	46
10.....	77	171	460	1,830	1,280	880	720	730	990	324	46	46
11.....	59	173	780	1,370	1,250	880	730	780	990	318	46	46
12.....	70	175	1,400	1,250	1,180	935	1,110	730	990	305	46	46
13.....	70	175	1,780	1,250	1,050	1,010	1,150	700	990	285	46	46
14.....	70	175	902	1,400	990	1,110	1,110	690	990	285	46	46
15.....	70	175	780	1,570	968	1,320	1,280	680	957	285	46	46
16.....	70	185	585	1,400	968	1,660	1,360	652	830	267	46	46
17.....	70	185	585	1,280	902	1,920	1,110	680	800	255	46	46
18.....	70	200	585	1,180	880	1,540	1,400	990	760	237	46	46
19.....	70	215	604	1,180	870	1,280	1,570	830	710	225	46	46
20.....	70	237	604	2,690	830	1,110	1,400	780	680	190	46	67
21.....	70	285	568	1,920	780	968	1,250	730	750	190	38	88
22.....	70	285	2,070	1,570	760	990	1,180	780	680	174	33	88
23.....	76	285	2,300	1,400	730	990	1,140	780	632	158	28	88
24.....	85	285	2,200	1,250	700	990	1,110	780	585	150	25	100
25.....	85	285	2,110	1,110	680	990	1,070	780	585	144	28	113
26.....	85	285	11,600	990	680	979	990	750	568	138	33	119
27.....	91	318	3,550	935	700	968	990	730	551	131	38	119
28.....	100	298	2,300	880	760	968	913	700	534	125	41	119
29.....	115	285	1,920	830	760	780	913	780	508	113	46	59
30.....	115	273	2,020	800	730	902	730	484	100	46	46	46
31.....	130	.....	2,020	760	700	700	.....	680	.....	88	41	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1908.				1908.				1908.			
1.....	46	372	372	11.....	84	153	241	21.....	197	1,190	228
2.....	44	197	332	12.....	95	148	241	22.....	197	2,000	260
3.....	42	197	332	13.....	95	142	260	23.....	197	1,160	372
4.....	44	197	318	14.....	1,540	142	203	24.....	197	1,160	497
5.....	49	197	296	15.....	1,030	142	222	25.....	197	1,030	396
6.....	52	197	282	16.....	525	142	210	26.....	197	910	372
7.....	56	197	274	17.....	372	142	197	27.....	197	800	332
8.....	59	180	260	18.....	260	142	197	28.....	197	497	332
9.....	70	164	260	19.....	260	228	197	29.....	197	544	544
10.....	77	158	247	20.....	235	1,300	197	30.....	260	412	480
								31.....	497	.....	412

NOTE.—Daily discharge determined as follows: July 22-27, 1907, and Nov. 12, 1907, to July 19, 1908, from rating curves well defined between 140 and 1,500 second-feet; and from three fairly well defined curves applicable July 28 to Oct. 11, 1907, and Sept. 29 to Dec. 31, 1908, Oct. 12 to Nov. 4, 1907, and July 20 to Sept. 28, 1907.

Monthly discharge of Applegate River at Murphy, Oreg., for 1907-8.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1907.					
July 22-31.....	197	135	157	3, 110	C.
August.....	544	59	156	9, 590	B.
September.....	142	77	107	6, 370	B.
1907-8.					
October.....	130	59	89.2	5, 480	C.
November.....	318	158	215	12, 800	B.
December.....	11, 600	237	1, 440	88, 500	B.
January.....	2, 690	760	1, 300	79, 900	B.
February.....	2, 300	632	961	55, 300	A.
March.....	1, 920	700	997	61, 300	A.
April.....	1, 570	652	984	58, 600	A.
May.....	1, 010	652	783	48, 100	A.
June.....	990	484	670	39, 900	A.
July.....	460	88	260	16, 000	C.
August.....	88	25	48.8	3, 000	B.
September.....	119	33	61.8	3, 680	A.
The year.....	11, 600	25	651	473, 000	
1908.					
October.....	1, 540	42	244	15, 000	B.
November.....	2, 000	142	481	28, 600	A.
December.....	544	197	302	18, 600	A.

KLAMATH RIVER DRAINAGE BASIN.

GENERAL FEATURES.

Klamath River drains a territory lying east of the Cascade Range in south-central Oregon and south of the Siskiyou Mountains in California. The river rises in Upper Klamath Lake, flows generally southward, and reaches the Pacific Ocean at Requa on the coast of northern California. Only that part of the basin lying in Oregon has been studied in detail. The drainage from this portion of the area is collected in large lakes whose margins are wide shallow marsh lands covered with tules and aquatic plants.

From Upper Klamath Lake, which stands 4,141 feet above sea level, flows Link River, a stream 1½ miles long, discharging into Lake Ewauna at an elevation of 4,080 feet. Klamath Falls, the principal city of this section, is located on Link River. From Lake Ewauna to the town of Keno, Klamath River flows through a flat, marshy country a distance of 20 miles. About 5 miles above Keno the river is connected with Lower Klamath Lake by a channel known as Klamath Straits. During high stages water flows from Klamath River into Lower Klamath Lake, and during low water the direction of the flow is reversed. About half a mile below Keno the river breaks over a rocky ledge, and here begins its precipitous fall of 100 to 200 feet per mile to its mouth.

The drainage area above Keno, exclusive of Lower Klamath Lake, is 3,150 square miles. The streams draining into Upper Klamath Lake head about 6,000 feet above sea level. The elevation of Klamath Falls is 4,100 feet.

The principal tributaries of Klamath River are Williamson River, which drains the northern part of the Klamath Indian Reservation, Sprague River, which is tributary to Williamson River and drains the southwestern rim of the Great Basin divide in Oregon, and Anna River, which heads in a large spring supposed to be fed by the waters of Crater Lake. Lost River, although not a tributary of the Klamath, is usually considered with it, as the two are connected by a slough. Water formerly flowed either way, the direction depending on the heights of the streams, but the flow is now stopped by an artificial dike.

The mean annual rainfall at Klamath Falls, about 12 inches, is fairly representative for this section of the drainage area. A large part of this precipitation occurs as snow. As nearly all the streams are spring fed and therefore rarely freeze, records of stream flow are little affected by ice.

Irrigation is practiced extensively in the upper part of the area, although dry farming has been fairly successful. The agricultural products consist chiefly of forage crops, the country being well adapted to stock raising. Grains, alfalfa, and the hardier vegetables and fruits are grown with some success, but the climate is too rigorous for the intensive agriculture that is possible at lower altitudes.

Within the period covered by stream-flow records the year of lowest run-off was 1905 and the highest 1907.

Gage records have been obtained since 1904 on Upper Klamath Lake, Lower Klamath Lake, and Tule Lake, and during 1907 and 1908 the three gages in Klamath River between Upper and Lower Klamath lakes were read. Since 1905 records of evaporation have been kept at Keno.

WILLIAMSON RIVER NEAR KLAMATH AGENCY, OREG.

Location.—In the NW. $\frac{1}{4}$ sec. 7, T. 32 S., R. 9 E., at lower extremity of Klamath Marsh, at point locally known as Rocky Ford, 13 miles northeast of Klamath Agency.

Records presented.—March 25, 1908, to June 26, 1910.

Drainage area.—1,160 square miles.

Gage.—March 25 to October 17, 1908, vertical staff 1,000 feet above the cable. October 17, 1908, Bristol self-recording gage was installed at same site; records obtained until December 31, 1908. May 30, 1909, gage moved to location of cable and set to read the same but at a different datum. New datum of gage, 4,622.19 feet above sea level. November 10, 1909, auxiliary staff gage installed below mouth of Spring Creek, about 11 miles below the station. Bristol self-recording gage used from April 15 to June 26, 1910.

Channel.—Gravel and sand; considerable growth of aquatic plants.

Discharge measurements.—Made from cable.

Winter flow.—Somewhat affected by ice.

Accuracy.—Estimates fair.

Discharge measurements of Williamson River near Klamath Agency, Oreg., in 1908-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	1909.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 26	C. E. Ellsworth.....	2.29	792	Apr. 26	Stevens and Kimble...	1.62	526
27	do.....	2.30	824	May 30	A. E. Geiger.....	.93	270
Apr. 28	do.....	1.56	505	Sept. 30	John Yadan.....	.30	73
May 15	H. Kimble.....	1.33	351	Nov. 7	do.....	1.00	239
June 19	do.....	.90	248	1910.			
July 16	do.....	.82	162	Aug. 11a	Leland Moser.....	.54	55.2
Sept. 26	do.....	.48	67				
Oct. 17	do.....	1.00	184				
Nov. 20	McGlashan and Kimble	1.09	278				

a The accuracy of this measurement is very uncertain, as the velocity was very low and the river bed covered with grass and tules.

Daily gage height, in feet, of Williamson River near Klamath Agency, Oreg., 1908-1910.

Day.	Mar.	Apr.	Sept.	Day.	Mar.	Apr.	Sept.	Day.	Mar.	Apr.	Sept.
1908.				1908.				1908.			
1		2.27		11		2.05		21		1.69	
2		2.26		12		2.02		22		1.65	
3		2.24		13		1.96		23		1.64	
4		2.20		14		1.92		24			
5		2.18		15		1.90		25	2.32		
6		2.16		16		1.86		26	2.30		0.50
7		2.14		17		1.78		27	2.30		.50
8		2.14		18		1.74		28	2.31	1.56	.50
9		2.12		19		1.71		29	2.30		.50
10		2.08		20		1.70		30	2.30		.50
								31	2.28		

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	0.50	1.05	1.04					1.21				
2	.50	1.04	1.05	1.03								
3	.50	1.04	1.04	1.03								
4	.50	1.03	1.02	1.05								
5	.50	1.02	.95	1.20								0.25
6	.50	1.02	.91	1.20								
7	.50	1.02	.94	1.25								
8	.50	1.00	.99	1.30								
9	.50	1.00	.91	1.23				1.15				
10	.50	1.00	.90	1.20								
11	.60	1.02	.87	1.20						0.57		
12	.60	1.03	1.03	1.45								
13	.60	1.03	1.03	1.54								.25
14	.70	1.05	1.00	1.47								
15	.80	1.04	.96									
16	.90	1.04	.90					1.08				
17	1.00	1.08	.85									
18	1.00	1.10	.80				1.95					
19	1.00	1.10	.98							.51		
20	1.00	1.08	1.06						0.70			
21	1.00	1.07	1.06									.25
22	1.00	1.09	1.05								0.20	
23	1.00	1.11	1.04									
24	1.01	1.13	1.03									
25	1.01	1.15	1.02							.47		
26	1.01	1.09	1.03									.27
27	1.02	1.06	1.03						.65			
28	1.02	1.04	1.03									
29	1.01	1.06	1.03								.18	
30	1.01	1.07	1.03					.93				.30
31	1.03											

Daily gage height, in feet, of Williamson River near Klamath Agency, Oreg., for 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10. ^a												
1								1.7				
2				1.8			^b 2.6	1.7				
3	0.31							1.65				
4								1.65				
5			1.70					1.65				
6					1.45	2.7		1.65	1.0			
7		1.00						1.65	1.0			
8								1.65	1.0			
9				1.6				1.6	1.0			
10	.43						^b 2.5	1.6	1.0			
11								1.55	1.0			
12			2.40					1.55	1.0			
13					1.25	^b 3.7		1.5	1.0			
14		1.20						1.5	.95			
15							2.1	1.5	.95			
16				1.2			2.1	1.5	.95			
17	.47						2.1	1.3	.95			
18							2.1	1.2	.9			
19			2.30				2.1	1.0	.9			
20					1.25	^b 3.4	1.9	1.05				
21		1.90					1.85	1.35				
22							1.9	1.2				
23				1.15			1.85	1.2				
24	.70						1.85	1.1				
25							1.75	1.1				
26			1.90				1.8	1.1	.9			
27					1.6	^b 3.1	1.75	1.0				
28		2.50					1.7	1.0				
29							1.7	1.1				
30				1.45			1.7					
31	.85											

^a River frozen most of the time during January and February, 1910; ice breaking up Feb. 27; channel probably cleared soon after.

^b Gage heights Mar. 13 to Apr. 10 estimated from those observed below Spring Creek.

Daily gage height, in feet, of Williamson River below Spring Creek, near Klamath Agency, Oreg., for 1910.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	Day.	Jan.	Feb.	Mar.	Apr.	May.	June.
1							16	0.20					
2	0.70			1.10			17						
3							18						
4							19						0.0
5							20		0.10	1.90			
6		0.20	1.30			0.0	21						
7							22					0.15	
8					0.27		23	.17					
9	.60						24				0.35		
10				1.00			25						
11							26						.0
12						.0	27		.10	1.60			
13		.15	2.20				28						
14							29					.10	
15					.20		30	.25			.30		
							31						

Daily discharge, in second-feet, of Williamson River near Klamath Agency, Oreg., for 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.								567				
2.				567			900	567				
3.	75							544				
4.								544				
5.			567					544				
6.					371	1,040		544	268			
7.		268						544	268			
8.								544	268			
9.				522				522	268			
10.	96						940	522	268			
11.								500	268			
12.			893					500	268			
13.					329	1,590		477	268			
14.		350						477	249			
15.							752	477	249			
16.				350				752	477	249		
17.	104							752	392	249		
18.								752	350	230		
19.			846					752	268	230		
20.					329	1,410		659	288			
21.		659						636	413			
22.								659	350			
23.				288				636	350			
24.	164							636	308			
25.								590	308			
26.			659					613	308	230		
27.					434	1,240		590	268			
28.		940						567	268			
29.								567	308			
30.				371				567				
31.	213											

NOTE.—Daily discharge determined from two fairly well defined rating curves, one applicable for 1908, and the other for 1909 and 1910. Measurement made in 1910 probably not reliable. Discharge for January and February, 1910, reduced by varying amounts to allow for effect of ice, as indicated by the observer's notes. Discharge interpolated for days on which gage was not read.

Monthly discharge of Williamson River near Klamath Agency, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908.					
March 25-31.	821	803	813	11,300	A.
April.	798	464	621	37,000	B.
May.			375	23,100	C.
June.			201	12,000	C.
July.			172	10,600	C.
August.			130	7,990	C.
September.			86	5,120	C.
The period.				107,000	
1908-9.					
October.	251	72	166	10,200	B.
November.	300	239	261	15,500	B.
December.	263	165	235	14,400	B.
January 1-14.			362	10,100	B.
April 18-30.			532	13,700	D.
May.			299	18,400	C.
June.			183	10,900	C.
July.			118	7,260	C.
August.			73.5	4,520	C.
September.			68.4	4,070	C.

Monthly discharge of Willamson River near Klamath Agency, Oreg., for 1908-1910—
Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October.....			124	7,620	C.
November.....			502	29,900	C.
December.....			734	45,100	C.
January.....	567	288	412	25,300	C.
February.....	520	329	364	20,200	C.
March.....	1,590	600	1,240	76,200	C.
April.....	1,040	567	785	46,700	B.
May.....	567	268	424	26,100	B.
June 1-26.....	293	230	255	13,200	B.
The period.....				290,000	

NOTE.—Monthly means for periods of infrequent gage heights obtained by interpolating between discharges for days on which the gage was read.

UPPER KLAMATH LAKE NEAR KLAMATH FALLS, OREG.

Location.—In sec. 30, T. 38 S., R. 9 E., at the outlet of Upper Klamath Lake, about 2 miles northwest of Klamath Falls.

Records presented.—May 28 to October 22, 1904; January 7, 1906, to September 30, 1910.

Gage.—Friez automatic register since February 16, 1906; vertical staff prior to that date. Zero of gage 4,136.13 feet above sea level. During 1904, vertical staff on Pelican Bay; zero 4,137.93 feet above sea level.

Accuracy.—Gage heights are very much affected by the wind. The water is lowered as much as 6 inches near the outlet when the wind blows from the south and is raised as much above its normal level when the wind is in the opposite direction. There is a periodic oscillation when the wind blows for any length of time.

Cooperation.—Station maintained by United States Reclamation Service since May, 1909.

Daily gage height, in feet, of Upper Klamath Lake near Klamath Falls, Oreg., for 1904.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1.....		5.7	4.5	3.85	3.4	3.4	16.....		5.15	4.2	3.65	3.4	3.3
2.....		5.65	4.55	3.85	3.35	3.35	17.....		5.1	4.15	3.5	3.4	3.35
3.....		5.65	4.5	3.85	3.4	3.35	18.....		5.05	4.2	3.55	3.35	3.3
4.....		5.6	4.5	3.75	3.4	3.3	19.....		5.0	4.1	3.5	3.35	3.4
5.....		5.6	4.45	3.75	3.4	3.3	20.....		4.95	4.1	3.45	3.5	3.45
6.....		5.55	4.55	3.8	3.35	3.25	21.....		4.9	4.05	3.45	3.4	3.5
7.....		5.5	4.45	3.85	3.4	3.3	22.....		4.85	4.05	3.45	3.5	3.45
8.....		5.5	4.3	3.85	3.4	3.3	23.....		4.8	4.05	3.4	3.6	.....
9.....		5.45	4.35	3.85	3.4	3.4	24.....		4.75	4.0	3.4	3.6	.....
10.....		5.4	4.4	3.7	3.3	3.45	25.....		4.7	4.05	3.4	3.55	.....
11.....		5.35	4.2	3.65	3.35	3.5	26.....		4.7	3.95	3.45	3.5	.....
12.....		5.3	4.3	3.7	3.4	3.45	27.....		4.7	3.9	3.4	3.5	.....
13.....		5.25	4.35	3.75	3.35	3.4	28.....		5.8	4.65	3.95	3.35	3.45
14.....		5.2	4.3	3.7	3.35	3.35	29.....		5.8	4.6	3.95	3.4	3.5
15.....		5.2	4.2	3.75	3.35	3.3	30.....		5.75	4.6	3.85	3.4	3.4
							31.....		5.7	.....	3.9	3.45	.....

Daily gage height, in feet, of Upper Klamath Lake near Klamath Falls, Oreg., for 1906-1910.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906.												
1.						5.30		7.00	6.30	5.70	4.95	4.50
2.						5.25		6.80	6.20	5.75	4.90	4.55
3.						5.35		6.80	6.10	5.70	4.90	4.50
4.					5.21	5.35		6.80	6.20	5.75	4.85	4.50
5.						5.40		6.70	6.30	5.70	4.90	4.50
6.												
7.				5.02		5.40		6.60	6.20	5.65	4.90	4.50
8.						5.40	6.15	6.50	6.20	5.60	4.90	4.35
9.						5.40	6.10	6.50	6.10	5.65	4.90	4.50
10.						5.40	6.20	6.40	6.20	5.60	4.80	4.60
						5.51	6.40	6.30	5.90	5.55	4.75	4.65
11.					5.02		6.40	6.60	5.70	5.50	4.70	4.55
12.							6.30	6.60	6.20	5.40	4.80	4.40
13.							6.40	6.40	6.20	5.45	4.70	4.60
14.				5.10			6.50	6.20	6.10	5.40	4.75	4.65
15.							6.30	6.40	6.00	5.45	4.70	4.50
16.					5.20		6.50	6.40	6.20	5.35	4.75	4.55
17.					5.20	5.50	6.50	6.30	6.10	5.35	4.70	4.50
18.					5.21	5.50	6.50	6.30	6.20	5.30	4.75	4.55
19.					5.21	5.50	6.50	6.40	6.20	5.25	4.70	4.55
20.					5.20	5.40	6.30	6.50	6.20	5.20	4.70	4.55
21.				4.38	5.22	5.20	6.50	6.40	6.10	5.30	4.70	4.50
22.					5.23	5.20	6.60	6.30	6.10	5.20	4.60	4.35
23.					5.25	5.00	6.80	6.30	6.10	5.20	4.55	4.50
24.					5.26	5.52	6.70	6.10	6.00	5.15	4.50	4.55
25.					5.35	5.45	6.80	5.90	6.00	5.20	4.45	4.55
26.					5.35	5.50	6.70	6.20	6.05	5.15	4.55	4.55
27.					5.40	5.60	6.90	6.20	6.00	5.10	4.55	4.55
28.				5.29	5.35	5.55	7.00	6.50	5.95	5.10	4.55	4.50
29.						5.55	7.00	6.50	5.90	5.00	4.50	4.50
30.						5.50	6.80	6.40	5.80	5.10	4.50	4.55
31.						6.45		6.40		5.00	4.50	
1906-7.												
1.	4.50	4.70	5.00	5.15	5.35	6.20	7.05	6.92	6.60	5.85	5.20	4.80
2.	4.65	4.30	4.90	5.15	5.50	6.30	7.00	6.90	6.60	5.80	5.25	4.80
3.	4.65	4.50	4.90	5.15	5.55	6.70	6.90	7.00	6.58	5.85	5.20	4.80
4.	4.60	4.50	4.90	5.15	5.65	6.60	6.60	6.95	6.50	5.85	5.15	4.80
5.	4.55	4.60	4.90	5.20	5.90	6.45	6.80	6.85	6.55	5.88	5.15	4.80
6.	4.50	4.60	4.90	5.40	6.05	6.35	6.85	6.80	6.60	5.70	5.12	4.82
7.	4.50	4.70	4.90	5.40	6.20	6.35	7.05	6.85	6.55	5.75	5.10	4.85
8.	4.50	4.80	4.90	5.40	6.30	6.35	7.08	6.85	6.40	5.75	5.15	4.85
9.	4.50	4.80	4.95	5.40	6.40	6.40	7.03	6.70	6.30	5.70	5.15	4.85
10.	4.50	4.80	4.80	5.40	6.50	6.30	7.05	6.70	6.25	5.68	5.05	4.85
11.	4.50	4.85	5.00	5.40	6.50	6.40	7.08	6.78	6.20	5.68	5.10	4.87
12.	4.55	4.75	5.00	5.40	6.50	6.45	7.09	6.90	6.25	5.70	5.05	4.90
13.	4.50	4.90	5.00	5.40	6.55	6.35	7.09	6.80	6.28	5.60	5.05	4.90
14.	4.55	4.85	5.00	5.40	6.55	6.30	7.15	6.78	6.30	5.60	5.05	4.85
15.	4.45	4.80	5.00	5.40	6.55	6.30	7.15	6.75	6.30	5.55	5.05	
16.	4.50	5.00	4.95	5.40	6.55	6.30	7.10	6.75	6.25	5.55	5.05	
17.	4.65	5.30	5.00	5.40	6.50	5.70	7.13	6.72	6.25	5.55	4.85	
18.	4.70	5.15	4.95	5.40	6.55	6.25	7.10	6.48	6.25	5.55	4.85	
19.	4.80	5.95	5.00	5.40	6.55	6.05	7.08	6.63	6.20	5.55	4.85	
20.	4.75	5.85	5.05	5.40	6.55	5.95	7.07	6.63	6.20	5.45	4.85	
21.	4.65	5.00	5.05	5.40	6.50	6.35	7.10	6.65	6.25	5.38	4.85	4.72
22.	4.60	5.15	5.00	5.40	6.55	6.00	7.15	6.68	6.20	5.35	4.85	4.72
23.	4.55	5.20	5.05	5.40	6.45	6.25	7.20	6.62	6.11	5.35	4.85	4.70
24.	4.55	5.05	5.10	5.40	6.15	6.80	7.20	6.65	6.10	5.32	4.95	4.68
25.	4.60	5.15	5.05	5.40	6.10	6.90	7.15	6.60	6.08	5.37	4.98	4.70
26.	4.55	5.15	5.10	5.40	6.25	7.00	7.15	6.65	6.05	5.38	5.00	4.70
27.	4.60	5.10	5.15	5.40	6.40	7.05	7.20	6.65	5.98	5.30	4.95	4.80
28.	4.60	5.05	5.15	5.40	6.25	7.00	6.95	6.65	6.00	5.27	4.95	4.95
29.	4.65	5.00	5.05	5.35		6.90	7.09	6.60	5.95	5.25	4.95	4.85
30.	4.70	5.00	5.10	5.35		6.95	6.95	6.58	5.85	5.23	4.95	4.80
31.	4.75		5.15	5.35				6.60		5.20	4.85	

Daily gage height, in feet, of Upper Klamath Lake near Klamath Falls, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	4.85	4.90	4.98	5.60	5.70	5.40	5.70	5.35	-----	4.85	4.47	4.25
2.....	4.80	4.90	4.98	5.60	-----	5.45	5.65	5.58	-----	4.80	4.42	4.25
3.....	4.77	5.00	5.20	5.60	-----	5.45	5.85	5.60	-----	4.75	4.18	4.25
4.....	4.75	5.00	5.40	5.70	-----	5.50	5.70	5.48	-----	4.75	4.20	4.25
5.....	4.75	5.02	5.00	5.70	5.65	5.55	5.75	5.45	-----	-----	4.18	4.34
6.....	4.75	5.02	5.10	5.75	5.65	5.55	5.90	5.20	5.24	4.72	4.15	4.30
7.....	4.75	5.00	5.00	5.75	5.65	5.50	5.85	5.60	5.05	4.67	4.13	4.45
8.....	4.85	5.00	5.05	5.60	5.60	5.47	5.70	5.60	5.15	4.70	4.26	4.34
9.....	4.75	4.95	5.05	5.75	5.60	5.47	5.60	5.55	5.05	-----	4.35	4.35
10.....	4.55	4.80	5.00	5.75	5.60	5.45	5.55	5.35	5.05	4.65	4.38	4.36
11.....	4.55	4.80	5.10	5.75	5.60	5.46	5.55	5.60	5.10	4.61	4.35	4.34
12.....	4.60	4.90	5.00	5.85	5.60	5.45	5.53	5.50	5.05	4.60	4.42	4.37
13.....	4.68	4.95	5.30	5.83	5.58	5.45	5.55	5.30	5.08	4.50	4.40	4.40
14.....	4.66	4.90	5.40	5.88	5.57	5.45	5.50	5.35	5.15	4.55	4.38	4.40
15.....	4.68	4.90	5.35	5.85	5.55	5.40	5.50	5.35	5.10	4.60	4.28	4.55
16.....	4.68	4.95	5.35	5.82	5.55	5.45	5.40	5.32	5.10	4.40	4.28	4.55
17.....	4.67	4.90	5.35	5.80	5.55	5.50	5.35	4.95	5.10	4.60	4.28	4.40
18.....	4.66	5.10	5.35	5.60	5.53	5.38	5.40	5.25	5.05	4.60	4.28	4.40
19.....	4.70	5.10	5.30	5.60	5.54	5.40	5.50	5.40	4.95	4.55	4.28	4.45
20.....	4.72	5.15	5.30	5.80	5.55	5.50	5.70	5.35	4.80	4.55	4.29	4.45
21.....	4.72	5.10	5.30	5.82	5.53	5.40	5.60	5.40	4.95	4.58	4.30	4.45
22.....	4.70	5.00	5.25	5.80	5.55	5.50	5.50	5.40	4.85	4.60	4.30	4.50
23.....	4.70	5.00	5.25	5.75	5.52	5.45	5.35	5.32	4.80	4.40	4.40	4.70
24.....	4.75	4.90	5.25	5.78	5.49	5.40	5.60	5.45	4.80	4.50	4.60	4.65
25.....	4.70	4.90	5.20	5.85	5.47	-----	5.48	5.50	4.80	4.40	4.32	4.50
26.....	4.75	4.80	5.65	5.90	5.45	-----	5.52	5.40	4.90	-----	4.35	4.50
27.....	4.90	4.90	5.60	5.80	5.50	-----	5.65	5.40	4.80	4.70	4.50	-----
28.....	4.95	4.95	5.70	5.75	5.35	-----	5.58	5.40	4.85	4.54	4.60	4.45
29.....	4.90	4.98	5.70	5.75	5.10	-----	5.50	5.55	4.90	4.55	4.60	4.45
30.....	4.90	5.00	5.50	5.85	-----	5.75	5.40	5.50	4.85	4.48	4.25	4.45
31.....	4.92	-----	5.60	5.75	-----	5.75	-----	-----	-----	4.45	4.25	-----
1908-9.												
1.....	4.80	4.70	4.92	4.95	5.50	5.95	-----	5.40	5.30	-----	4.12	4.60
2.....	4.90	4.70	4.88	4.95	5.50	5.95	-----	5.50	-----	-----	4.20	4.60
3.....	4.61	4.75	4.85	-----	6.10	5.90	-----	5.51	-----	4.80	4.16	4.70
4.....	4.50	4.75	4.90	-----	6.00	6.00	6.00	5.40	-----	4.70	4.15	4.45
5.....	4.45	4.75	4.90	-----	6.05	5.85	-----	-----	5.40	4.60	4.18	4.46
6.....	4.50	4.75	4.85	-----	5.80	6.05	5.80	-----	-----	4.60	4.20	4.47
7.....	4.50	4.75	5.00	-----	5.85	6.05	5.75	-----	5.25	4.60	4.38	4.50
8.....	4.45	-----	5.05	-----	5.82	6.15	5.75	-----	-----	4.60	4.44	4.47
9.....	4.50	-----	4.95	-----	5.81	6.10	5.70	5.10	-----	4.60	4.37	4.60
10.....	4.50	-----	5.10	5.00	5.82	6.10	-----	5.12	-----	4.50	4.34	4.52
11.....	4.50	4.75	5.05	4.95	5.82	6.00	-----	5.15	-----	4.70	4.38	4.45
12.....	4.45	4.75	5.05	-----	5.75	5.90	-----	4.99	5.10	4.68	4.40	4.35
13.....	4.35	4.75	4.90	-----	5.78	5.90	-----	5.00	5.30	4.80	4.37	4.36
14.....	4.50	4.74	4.95	5.08	5.85	5.90	-----	4.98	5.18	4.45	4.26	4.37
15.....	4.70	4.72	4.90	5.06	5.85	5.90	-----	4.97	5.05	4.35	4.12	4.33
16.....	4.74	4.68	4.97	-----	5.75	5.85	-----	5.60	-----	4.25	4.08	4.37
17.....	4.80	4.60	4.96	5.40	5.87	5.80	-----	5.56	-----	4.54	4.08	4.30
18.....	-----	4.72	4.95	5.40	5.87	5.35	5.70	5.40	4.60	4.60	4.06	4.40
19.....	5.01	4.40	4.95	5.35	5.95	5.20	5.70	5.38	-----	-----	4.08	4.55
20.....	5.00	4.70	4.98	5.25	5.93	4.90	5.70	5.30	-----	-----	4.20	4.50
21.....	4.75	4.65	4.98	5.55	6.10	5.90	5.70	5.20	-----	-----	4.25	4.40
22.....	4.75	-----	5.00	5.65	6.08	5.90	5.75	5.00	5.15	-----	4.35	4.35
23.....	4.74	4.90	4.98	5.70	6.10	5.80	5.70	-----	5.07	-----	4.25	4.23
24.....	4.74	4.83	4.98	5.45	5.70	5.80	5.65	-----	5.02	-----	4.23	3.90
25.....	4.75	4.85	4.95	5.55	5.90	5.82	5.65	5.40	4.97	4.65	4.20	-----
26.....	4.73	4.90	4.95	5.55	6.00	5.85	5.50	-----	4.85	4.55	4.30	-----
27.....	4.72	4.85	4.95	5.55	5.95	5.85	5.55	-----	-----	4.38	4.30	-----
28.....	4.65	4.85	4.95	5.55	5.93	-----	5.60	-----	-----	4.22	4.38	-----
29.....	4.55	4.85	4.95	5.55	-----	-----	5.40	5.40	-----	4.20	4.60	-----
30.....	4.68	4.85	4.95	5.45	-----	-----	5.40	-----	-----	4.16	4.62	-----
31.....	4.72	-----	4.95	5.30	-----	-----	-----	-----	-----	4.13	4.62	-----

Daily gage height, in feet, of Upper Klamath Lake near Klamath Falls, Oreg., for 1906-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....		4.50	4.60	6.00	.....	5.75	6.70	6.10	5.90	4.90	4.50	.....
2.....		4.58	.....	6.00	.....	5.90	6.80	6.08	5.60	.....	4.43	.....
3.....		4.58	5.90	6.00	5.40	6.00	6.62	6.10	5.55	.....	4.48	4.30
4.....		4.65	5.90	6.00	5.40	5.90	6.58	6.05	5.30	.....	4.35	4.30
5.....	4.30	4.65	5.89	6.00	5.40	5.95	6.60	6.05	5.35	.....	4.33	4.32
6.....	4.50	4.43	5.89	6.00	5.40	6.00	6.51	6.00	5.35	.....	4.59	4.35
7.....	4.38	4.50	5.88	6.00	5.40	6.10	6.45	5.92	5.30	.....	4.56	4.30
8.....	4.38	4.70	5.87	6.00	5.41	6.17	6.45	5.85	5.18	.....	4.51	4.30
9.....	4.25	4.75	5.85	6.00	5.43	6.23	6.30	5.66	5.10	4.80	4.51	4.31
10.....	4.25	4.80	5.84	5.90	5.45	6.30	6.10	5.90	5.10	4.80	4.51	.....
11.....	4.27	4.85	5.82	5.90	5.50	6.35	6.52	5.90	5.35	4.80	4.54	.....
12.....	4.25	4.75	5.78	5.80	5.50	6.43	6.60	5.80	5.35	4.75	4.59	.....
13.....	4.25	.....	5.78	5.60	5.41	6.46	6.55	5.65	5.40	4.70	4.50	.....
14.....	4.25	4.52	5.78	5.50	5.42	6.45	6.40	5.60	5.25	4.50	4.53	.....
15.....	4.26	4.23	5.78	5.50	5.43	6.46	6.37	5.44	5.30	4.55	4.50	.....
16.....		4.21	.....	5.50	5.43	6.51	6.35	5.40	5.15	4.62	.....	.....
17.....		4.21	.....	5.50	5.43	6.20	6.30	5.42	5.10	4.75	.....	4.52
18.....		4.15	.....	5.50	5.43	6.30	6.10	5.50	4.60	4.62	.....	4.50
19.....		4.18	.....	5.50	5.40	5.90	6.35	5.50	4.80	4.50	.....	4.60
20.....		.....	.....	5.50	5.40	6.00	6.30	5.40	4.80	4.56	4.31	4.28
21.....		.....	.....	5.50	5.38	6.00	6.25	5.25	4.80	4.70	4.30	4.32
22.....		.....	.....	5.50	5.39	6.13	6.20	5.20	4.76	4.60	4.31	4.30
23.....		.....	.....	.....	5.38	6.13	6.45	5.10	4.70	4.55	4.50	4.32
24.....	4.45	4.38	.....	.....	5.45	6.23	6.30	5.20	4.70	4.55	4.30	4.65
25.....	4.46	4.43	.....	.....	5.45	6.33	6.40	5.10	4.94	4.55	4.30	4.58
26.....	4.42	4.43	.....	.....	5.50	6.70	6.40	5.20	4.98	4.55	4.30	4.58
27.....	4.46	4.45	.....	.....	5.60	7.00	6.40	5.20	5.02	4.50	.....	4.59
28.....	4.50	4.51	.....	.....	5.65	6.95	6.40	5.65	4.92	4.45	.....	4.62
29.....	4.50	4.64	.....	.....	.....	6.85	6.35	5.75	5.05	4.50	.....	4.59
30.....	4.40	4.65	.....	.....	.....	6.90	6.20	5.70	4.98	4.48	.....	4.60
31.....	4.45	.....	.....	.....	.....	6.90	.....	5.75	.....	4.59	.....	.....

LINK RIVER AT KLAMATH FALLS, OREG.

Location.—In sec. 32, T. 38 S., R. 9 E., at the county bridge over Link River at Klamath Falls, $1\frac{1}{4}$ miles below outlet of Upper Klamath Lake, and immediately at head of Lake Ewauna.

Records presented.—May 15, 1904, to September 30, 1910.

Drainage area.—3,110 square miles.

Gage.—Chain gage at bridge. Since June 6, 1908, a Friez automatic gage has also been maintained in the rapids above the bridge.

Channel.—Permanent at both gages; water swift at upper gage, sluggish at lower.

Discharge measurements.—Made at the county bridge.

Winter flow.—Gage height seldom if ever affected by ice.

Diversions.—Since about September 1, 1908, water has been diverted around the Friez gage in the Keno canal on west side of river. This water, after being used in the Moore Bros. power plant, has been returned to the river between the Friez gage and the bridge. Measurements and records of the United States Reclamation Service have made possible a fairly accurate estimate of the amount of this diversion. It has been measured from time to time, but has been held fairly constant between dates of change. Some water has been wasted over a spillway just above the power flume, probably not more than 5 second-feet on the average. Water has also been diverted in the main canal of the Klamath project on the east side of the river, but only a small quantity prior to the irrigating season of 1911.

Accuracy.—The records prior to June 6, 1908, especially the individual daily records, are not reliable. For longer periods—a month or more—the determination of mean flow can probably be accepted as not greatly in error. This condition is accounted for by the effect of wind on the discharge at this station. Until May 8, 1908, the gage was situated at the bridge at the upper end of Lake Ewauna. At the outlet of Upper Klamath Lake the river breaks over a rather shallow ledge. A strong wind upstream blows the water back from this outlet and at the same

time increases the height of water on the gage by backing the water in Lake Ewauna, causing diminished flow with increased gage height. So great is this effect of the wind that the river has been known to go entirely dry for a few hours at a time. When the wind is downstream the flow of Link River is greatly increased, but the surface of Lake Ewauna is so large that the increase in flow is not shown by the gage heights. In the long run these wind effects are no doubt compensating, but little dependence can be placed in the published daily records prior to March 7, 1907. On this date an anemometer was installed on the bridge and a ship's taffrail log was trailed in the water under the bridge. It was hoped that the daily reading from this log would afford some indication of the velocities with the anemometer records. Although the records obtained by this device were much more reliable during 1907 than previously, even they were not all that could be desired. It became evident that owing to the sudden changes of the wind complete data could not be obtained without automatic recording devices on both the log and anemometer. The method was effective, however, in reducing the probable error of the estimates from about 15 per cent to within less than 5 per cent. On June 6, 1908, a Friez gage was installed in the rapids, where it could be affected only by change in flow, measurements being made at the bridge as formerly. From that date until some time during the summer of 1909 the records given by the Friez gage were reliable, but since that time, on account of diversions, damage resulting from logs striking the gage well, back-water from logs, and failure to keep the gage always at proper datum, the records are subject to some uncertainty; they are still, however, more reliable than records that can be obtained from gage heights at the bridge.

Cooperation.—Since May, 1909, station has been maintained by the United States Reclamation Service, the Survey working up and publishing the data.

Discharge measurements of Link River at Klamath Falls, Oreg., in 1904–1908.

[Gage at bridge.]

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1907.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 15	Lewis and Landes.....	7. 15	9,073	Jan. 10	L. F. Hendricks.....	3. 80	2, 300
June 7	do.....	6. 55	7, 342	Feb. 18	do.....	4. 90	4, 910
Aug. 25	T. H. Humphreys.....	3. 70	1, 915	Mar. 2	do.....	5. 00	4, 980
Sept. 16	C. T. Darley.....	3. 40	1, 782	Apr. 1	do.....	5. 60	5, 620
28	do.....	3. 30	2, 005	20	do.....	5. 80	5, 570
Oct. 18	do.....	3. 40	2, 135	May 9	Stevens and Ellsworth.....	5. 65	4, 000
Nov. 8	do.....	3. 50	1, 968	23	J. C. Stevens.....	5. 30	4, 220
24	do.....	3. 60	1, 898	June 13	C. E. Ellsworth.....	4. 98	4, 390
1905.				19	do.....	4. 85	3, 740
Jan. 4	C. T. Darley.....	4. 05	2, 862	July 5	do.....	4. 35	2, 450
17	do.....	4. 10	2, 768	23	do.....	3. 85	1, 950
17	do.....	4. 10	2, 872	31	do.....	3. 65	1, 640
17	do.....	4. 10	2, 627	Aug. 12	do.....	3. 40	1, 610
Feb. 1	do.....	4. 30	3, 338	Sept. 4	do.....	3. 15	1, 640
13	do.....	4. 50	2, 994	19	do.....	3. 05	1, 490
17	do.....	4. 40	2, 802	Oct. 26	do.....	3. 25	1, 870
Mar. 2	do.....	4. 40	2, 984	Nov. 13	do.....	3. 32	1, 830
Apr. 12	do.....	4. 49	3, 645	1908.			
June 5	do.....	3. 88	2, 324	Feb. 17	C. E. Ellsworth.....	4. 19	3, 030
20	do.....	3. 59	1, 800	Mar. 14	do.....	4. 20	2, 800
28	do.....	3. 40	1, 517	21	do.....	4. 15	2, 890
July 11	do.....	3. 14	1, 466	Apr. 3	do.....	4. 36	3, 800
18	do.....	2. 97	1, 063	15	do.....	4. 26	2, 620
28	do.....	2. 80	1, 049	18	do.....	4. 18	2, 700
Aug. 7	do.....	2. 63	1, 041	21	do.....	4. 28	2, 610
14	do.....	2. 59	1, 066	25	Ellsworth and Kimble.....	4. 16	2, 820
16	Clapp and Darley.....	2. 60	1, 104	30	do.....	4. 16	2, 670
Sept. 7	C. T. Darley.....	2. 58	1, 032	May 5	do.....	4. 11	2, 560
16	do.....	2. 58	1, 073	9	H. Kimble.....	4. 02	2, 620
Nov. 2	do.....	2. 90	1, 283	13	do.....	4. 07	2, 680
1906.				18	do.....	4. 03	2, 170
May 11	L. F. Hendricks.....	5. 06	4, 560	21	do.....	4. 04	2, 980
June 20	do.....	4. 65	3, 400	25	do.....	3. 94	2, 530
22	Clapp and Hendricks.....	4. 65	3, 640	30	do.....	3. 87	2, 910
July 9	L. F. Hendricks.....	4. 25	2, 860	June 4	do.....	3. 76	2, 290
24	do.....	3. 80	2, 190	13	do.....	.....	2, 000
Aug. 22	do.....	3. 00	1, 390				
Dec. 20	do.....	3. 48	2, 050				

Discharge measurements of Link River at Klamath Falls, Oreg., in 1908-1910.

Date.	Hydrographer.	At bridge.		Esti- mated dis- charge in Keno canal.	At rapids.	
		Gage height.	Dis- charge.		Gage height.	Dis- charge.
1908.		<i>Feet.</i>	<i>Sec.-ft.</i>	<i>Sec.-ft.</i>	<i>Feet.</i>	<i>Sec.-ft.</i>
June 17	Howard Kimble	3.60	2,110	-----	1.85	2,110
23	do	3.53	1,710	-----	-----	1,710
29	do	3.40	1,760	-----	1.65	1,760
July 1	do	3.37	1,620	-----	1.57	1,620
7	do	3.25	1,570	-----	1.42	1,570
9	do	3.20	1,530	-----	1.44	1,530
13	do	3.15	1,920	-----	1.70	1,920
18	do	3.05	1,330	-----	1.33	1,330
22	do	3.00	1,390	-----	1.30	1,390
28	do	2.85	1,210	-----	1.19	1,210
Aug. 14	do	2.60	1,250	-----	1.20	1,250
Sept. 1	do	2.49	715	50	.75	665
16	do	2.43	1,080	50	1.02	1,030
29	do	2.53	936	50	.92	886
Oct. 13	do	2.75	1,180	50	1.20	1,130
26	do	3.25	1,760	50	1.59	1,710
31	do	3.29	1,720	50	1.60	1,670
Nov. 13	do	3.26	1,870	75	1.65	1,800
Dec. 7	do	3.40	1,830	75	1.64	1,760
1909.						
Feb. 16	Howard Kimble	-----	3,420	130	2.58	3,290
Apr. 17	do	4.71	3,440	130	^a 2.60	3,310
May 24	Kimble and Geiger	4.37	2,760	130	2.24	2,630
July 24	A. E. Geiger	4.35	2,690	130	2.20	2,560
June 23	do	-----	2,320	130	2.03	2,190
Sept. 9	John Yadon	-----	1,040	130	^a 1.03	910
1910.						
Mar. 17	John Yadon	5.08	4,520	130	3.20	4,390
July 29	do	2.90	1,180	130	^a 1.06	1,050
Aug. 25	Leland Moser	2.57	1,160	130	^a .91	1,030

^a Mean gage height for day taken as gage reading for measurement.

Discharge measurements of Keno canal near Klamath Falls, Oreg., in 1908-1910.

Date.	Dis- charge.	Date.	Dis- charge.	Date.	Dis- charge.
1908.	<i>Sec.-ft.</i>	1909.	<i>Sec.-ft.</i>	1910.	<i>Sec.-ft.</i>
Nov. 11	65	Feb. 25	^a 58	June 9	133
21	65			13	130

^a Discharge temporarily reduced. Average flow in 1909 was about 130 second-feet.

Daily gage height, in feet, of Link River at Klamath Falls, Oreg., for 1904-1910.

Gage at Bridge.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1904.						1904.					
1		6.75	5.5	4.35	3.5	16	7.1	6.25	5.0	3.90	3.35
2		6.8	5.45	4.3	3.5	17	7.1	6.2	4.95	3.85	3.35
3		6.7	5.4	4.25	3.5	18	7.15	6.1	4.9	3.85	3.3
4		6.7	5.4	4.2	3.45	19	7.1	6.05	4.85	3.8	3.3
5		6.65	5.35	4.2	3.45	20	7.1	6.0	4.8	3.8	3.3
6		6.6	5.3	4.15	3.45	21	7.1	6.0	4.8	3.75	3.3
7		6.55	5.3	4.15	3.45	22	7.05	5.95	4.75	3.75	3.45
8		6.55	5.25	4.15	3.45	23	7.0	5.85	4.75	3.7	3.4
9		6.5	5.25	4.1	3.4	24	7.0	5.8	4.75	3.7	3.35
10		6.45	5.2	4.05	3.4	25	6.95	5.75	4.7	3.7	3.3
11		6.4	5.2	4.05	3.4	26	6.9	5.75	4.65	3.65	3.3
12		6.4	5.15	4.0	3.4	27	6.9	5.7	4.6	3.65	3.25
13		6.35	5.1	4.0	3.35	28	6.9	5.65	4.55	3.6	3.3
14		6.3	5.1	3.95	3.35	29	6.85	5.6	4.5	3.55	3.2
15		7.15	6.3	5.05	3.95	30	6.85	5.55	4.45	3.55	3.2
						31	6.8	-----	4.4	3.55	-----

Daily gage height, in feet, of Link River at Klamath Falls., Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	3.3	3.5	3.55	4.1	4.2	4.4	4.5	4.2	3.95	3.45	2.79	2.6
2.....	3.3	3.45	3.6	4.1	4.4	4.4	4.5	4.2	3.85	3.45	2.75	2.6
3.....	3.3	3.45	3.6	4.1	4.4	4.4	4.5	4.2	3.85	3.3	2.7	2.58
4.....	3.3	3.45	3.6	4.1	4.4	4.4	4.5	4.2	3.9	.....	2.67	2.6
5.....	3.3	3.45	3.65	4.1	4.5	4.4	4.5	4.2	3.88	3.25	2.67	2.58
6.....	3.3	3.5	3.7	4.1	4.5	4.4	4.5	4.2	3.88	3.3	2.67	2.6
7.....	3.3	3.5	3.7	4.1	4.4	4.4	4.5	4.2	3.81	.....	2.5	2.58
8.....	3.35	3.5	3.7	4.1	4.4	4.4	4.5	4.2	3.88	3.2	2.63	2.58
9.....	3.4	3.5	3.7	4.1	4.4	4.4	4.5	4.2	3.85	.....	2.6	2.58
10.....	3.4	3.5	3.7	4.1	4.5	4.4	4.5	4.2	3.8	3.25	2.6	2.62
11.....	3.4	3.55	3.7	4.1	4.5	4.4	4.5	4.2	3.8	.....	2.59	2.63
12.....	3.35	3.55	3.7	4.1	4.5	4.4	4.5	4.2	3.78	.....	2.6	2.58
13.....	3.35	3.6	3.75	4.1	4.5	4.4	4.5	4.2	3.75	3.2	2.6	2.58
14.....	3.4	3.5	3.75	4.1	4.5	4.4	4.5	4.2	3.7	3.1	2.59	2.6
15.....	3.4	3.5	3.8	4.1	4.5	4.4	4.5	4.1	3.6	3.05	2.6	2.6
16.....	3.45	3.5	3.8	4.1	4.5	4.4	4.5	4.1	3.7	.....	2.6	2.55
17.....	3.4	3.5	3.8	4.1	4.4	4.4	4.5	4.1	3.62	2.9	2.6	2.5
18.....	3.4	3.5	3.8	4.1	4.4	4.4	4.45	4.05	.....	2.9	2.63	2.55
19.....	3.45	3.55	3.8	4.1	4.4	4.4	4.4	4.05	3.6	3.0	2.6	2.6
20.....	3.45	3.5	3.8	4.1	4.4	4.4	4.4	4.05	3.59	2.9	2.6	2.6
21.....	3.45	3.5	3.8	4.1	4.4	4.4	4.35	4.0	.....	2.9	2.6	2.6
22.....	3.45	3.55	3.85	4.1	4.4	4.4	4.35	4.0	3.5	2.95	2.6	2.58
23.....	3.45	3.55	3.9	4.1	4.4	4.4	4.35	4.0	3.5	2.85	2.6	2.6
24.....	3.45	3.6	3.95	4.2	4.4	4.4	4.3	4.0	3.5	2.85	2.6	2.68
25.....	3.45	3.6	.....	4.2	4.4	4.4	4.3	4.0	3.4	.....	2.6	2.55
26.....	3.45	3.6	.....	4.2	4.4	4.4	4.3	4.0	3.4	.....	2.7	2.58
27.....	3.45	3.6	.....	4.2	4.4	4.4	4.3	4.0	3.4	.....	2.8	2.6
28.....	3.45	3.6	.....	4.1	4.4	4.5	4.25	4.0	3.4	.....	2.6	2.62
29.....	3.45	3.6	.....	4.2	.....	4.6	4.25	4.0	3.4	2.78	2.6	2.65
30.....	3.45	3.65	.....	4.2	.....	4.5	4.25	3.95	3.35	2.79	2.65	2.65
31.....	3.45	.....	.....	4.2	.....	4.5	.....	3.95	.....	2.78	2.55	.....
1905-6.												
1.....	2.7	2.81	3.25	3.5	3.65	3.75	4.25	5.0	4.85	4.4	3.5	2.9
2.....	2.65	2.8	3.3	3.45	3.65	3.9	4.2	5.05	4.85	4.35	3.5	2.85
3.....	2.7	2.81	3.29	3.4	3.65	3.85	4.2	5.0	4.9	4.4	3.5	2.9
4.....	2.7	2.84	3.2	3.5	3.65	3.7	4.2	4.95	4.9	4.4	3.45	2.9
5.....	2.9	2.82	3.2	3.5	3.65	3.7	4.2	5.0	4.95	4.3	3.45	2.9
6.....	2.9	2.88	3.2	3.45	3.6	3.7	4.3	5.0	4.8	4.3	3.4	2.85
7.....	2.95	2.86	3.21	3.45	3.6	3.7	4.35	4.95	4.8	4.25	3.35	2.95
8.....	2.7	2.99	3.23	3.45	3.6	3.7	4.45	4.95	4.85	4.3	3.3	2.95
9.....	2.9	2.99	3.24	3.5	3.6	3.75	4.4	5.0	4.8	4.25	3.3	.....
10.....	2.8	2.98	3.28	3.5	3.6	3.75	4.5	5.05	4.95	4.2	3.3	2.8
11.....	2.75	2.99	3.25	3.5	3.6	3.7	4.5	5.05	5.0	4.15	3.3	2.8
12.....	2.8	2.9	3.26	3.5	3.6	3.85	4.5	4.9	4.9	4.15	3.2	2.85
13.....	2.8	2.95	3.27	3.5	3.6	3.9	4.55	4.9	4.75	4.15	3.15	2.8
14.....	2.8	2.95	3.24	3.6	3.6	3.9	4.6	5.1	4.7	4.05	3.2	2.8
15.....	2.7	2.95	3.34	3.55	3.65	3.95	4.65	5.0	4.8	4.05	3.15	2.8
16.....	2.8	2.9	3.26	3.8	3.6	3.9	4.75	4.9	4.75	4.05	3.15	2.85
17.....	2.8	2.9	3.33	3.8	3.65	3.9	4.8	4.9	4.7	4.05	3.15	2.85
18.....	2.8	2.9	3.32	3.8	3.75	3.95	4.8	5.15	4.65	4.00	3.1	2.85
19.....	2.8	3.2	3.32	3.85	3.65	3.9	4.8	4.95	4.6	3.95	3.1	2.85
20.....	2.85	3.1	3.26	3.8	3.65	3.95	4.85	4.9	4.65	3.95	3.05	2.85
21.....	2.85	3.3	3.27	3.85	3.7	4.0	4.9	4.85	4.55	3.95	3.1	2.85
22.....	2.79	3.2	3.33	3.7	3.7	3.95	4.95	4.8	4.6	3.85	3.0	2.8
23.....	2.8	3.15	3.3	3.75	3.75	4.15	5.0	4.85	4.6	3.8	2.95	2.8
24.....	2.85	3.1	3.32	3.75	3.7	3.95	4.95	4.9	4.6	3.75	3.0	2.9
25.....	2.81	3.2	3.29	3.7	3.7	4.05	4.95	5.1	4.55	3.75	3.0	2.9
26.....	2.8	3.25	3.35	3.7	3.85	4.0	4.95	5.0	4.55	3.7	3.05	2.85
27.....	2.89	3.15	3.36	3.7	3.7	4.0	5.05	4.95	4.5	3.65	3.0	2.85
28.....	2.88	3.15	3.33	3.7	3.6	4.05	5.1	5.0	4.5	3.7	2.9	2.85
29.....	2.88	3.4	3.4	3.7	.....	4.1	5.0	4.9	4.45	3.6	3.0	2.85
30.....	2.81	3.2	3.53	3.7	.....	4.2	4.95	4.9	4.45	3.55	2.9	2.85
31.....	2.9	.....	3.53	3.65	.....	4.2	.....	4.9	.....	3.55	2.9	.....

Daily gage height, in feet, of Link River at Klamath Falls, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	2.85	3.0	3.3	3.60	3.90	5.02	5.60	5.68	5.28	4.42	3.55	3.15
2.....	2.9	3.3	3.25	3.85	3.95	5.00	5.68	5.70	5.25	4.45	3.52	3.15
3.....	2.8	3.4	3.25	3.80	4.10	5.05	5.62	5.65	5.15	4.40	3.50	3.15
4.....	2.8	.....	3.3	3.80	4.25	5.10	5.75	5.60	5.12	4.38	3.48	3.15
5.....	2.85	2.95	3.3	3.75	4.25	5.12	5.65	5.65	5.08	4.32	3.45	3.15
6.....	.....	2.95	3.3	3.75	4.32	5.15	5.70	5.62	5.05	4.32	3.42	3.15
7.....	.....	2.95	3.45	3.75	4.40	5.12	.....	5.68	5.00	4.28	3.38	3.10
8.....	2.85	3.0	3.3	3.75	4.45	5.10	5.72	5.62	4.95	4.25	3.35	3.10
9.....	2.85	3.05	.....	3.80	4.50	5.10	5.70	5.62	4.92	4.20	3.35	.....
10.....	2.85	3.05	3.45	3.80	4.55	5.10	5.72	5.70	4.90	4.18	3.30	.....
11.....	2.85	3.05	3.4	3.80	4.62	5.15	5.75	5.62	4.98	4.18	3.30	.....
12.....	2.8	3.1	3.4	3.80	4.70	5.15	5.79	.....	4.95	4.15	3.32	.....
13.....	2.8	3.15	3.4	3.80	4.75	5.05	5.80	5.48	4.90	4.12	3.28	.....
14.....	2.9	3.1	3.4	3.80	4.80	5.05	5.78	5.50	4.88	4.02	3.25	.....
15.....	2.85	3.2	3.5	3.82	4.80	5.10	5.75	5.50	4.82	3.98	3.25	.....
16.....	2.85	3.2	3.45	3.82	4.80	5.05	5.75	5.48	4.82	3.95	3.25	.....
17.....	2.85	3.25	3.5	3.85	4.85	5.10	5.75	5.42	4.82	3.90	3.22	3.10
18.....	2.85	3.2	3.45	3.85	4.90	5.20	5.80	5.45	4.85	3.88	3.20	3.08
19.....	2.85	3.2	3.4	3.85	4.90	5.32	5.78	5.40	4.82	3.88	3.20	3.10
20.....	2.9	3.2	3.5	3.85	4.90	5.28	5.75	5.32	4.78	3.88	3.18	3.12
21.....	2.9	3.25	3.5	3.90	4.90	5.45	5.80	5.38	4.75	3.82	3.15	3.10
22.....	2.9	3.15	3.6	3.90	4.90	5.62	5.80	5.35	4.70	3.80	3.15	3.10
23.....	2.9	3.25	.....	3.88	4.90	5.35	5.78	5.35	4.70	3.80	3.15	3.15
24.....	2.9	3.3	3.5	3.82	5.00	5.42	5.78	5.32	4.65	3.78	3.30	3.12
25.....	2.9	.....	.....	3.80	5.05	5.48	5.75	5.30	6.62	3.75	3.22	3.18
26.....	2.9	3.3	3.6	3.80	5.00	5.48	5.70	5.28	4.65	3.75	3.20	3.08
27.....	2.95	3.3	3.6	3.80	5.00	5.52	5.72	5.30	4.60	3.70	3.18	3.12
28.....	2.95	3.3	3.6	3.80	4.92	5.58	5.68	5.30	4.55	3.70	3.20	3.10
29.....	2.95	.....	3.6	3.80	.....	5.62	5.65	5.28	4.52	3.65	3.18	3.10
30.....	2.9	3.3	.....	3.82	.....	5.58	5.62	5.25	4.52	3.65	3.15	3.15
31.....	3.0	.....	3.6	3.90	.....	5.60	.....	5.28	.....	3.60	3.15	.....
1907-8.												
1.....	3.12	3.28	3.43	4.00	4.40	.....	4.22	4.25	3.84	3.37	2.90	2.50
2.....	3.10	3.30	3.45	4.01	4.50	4.22	4.25	4.14	3.76	3.38	.....	2.52
3.....	3.15	3.30	3.48	4.05	4.40	4.20	4.35	.....	3.77	3.38	2.79	2.60
4.....	3.15	3.29	3.50	.....	4.34	4.20	4.24	4.09	3.75	.....	2.82	2.60
5.....	3.10	3.28	3.40	4.00	4.34	4.22	.....	4.11	3.75	3.25	2.78	2.47
6.....	3.15	3.30	3.50	4.04	4.50	4.20	4.24	4.22	3.74	3.25	2.80	.....
7.....	3.15	3.30	3.46	4.10	4.31	4.21	4.27	4.12	3.80	3.25	2.77	2.45
8.....	3.10	3.33	.....	4.18	4.50	.....	4.21	4.06	.....	3.23	2.72	2.39
9.....	3.10	3.30	3.45	4.12	.....	4.20	4.24	4.04	3.74	3.20	.....	2.43
10.....	3.10	3.35	3.52	4.08	4.24	.....	4.25	4.06	3.72	3.18	2.77	2.46
11.....	3.15	3.35	3.49	4.10	4.25	4.20	4.26	4.05	3.68	3.11	2.70	2.46
12.....	3.12	3.36	3.58	.....	4.24	4.20	.....	4.06	3.71	3.17	2.72	2.44
13.....	3.12	3.32	3.62	4.11	4.26	4.18	4.35	4.04	3.74	3.15	2.62	2.43
14.....	3.18	3.30	3.55	4.12	4.25	4.20	4.27	4.01	3.65	3.12	.....	2.43
15.....	3.15	3.36	.....	4.14	.....	4.20	4.22	4.04	3.68	3.06	2.68	2.46
16.....	3.15	3.32	.....	4.10	4.30	4.19	4.28	4.05	3.66	3.08	.....	2.43
17.....	3.15	3.35	3.60	4.15	4.22	4.22	4.30	4.10	3.60	3.07	2.70	2.44
18.....	3.15	3.32	3.60	4.20	4.24	4.14	4.20	4.03	3.66	3.05	.....	2.47
19.....	3.16	3.36	3.67	.....	4.20	4.19	4.18	3.98	3.56	3.05	2.68	2.48
20.....	.....	3.36	3.65	4.26	4.22	4.22	4.29	4.01	3.85	.....	2.63	.....
21.....	.....	3.39	3.60	4.20	4.20	4.15	4.24	4.02	3.47	3.02	.....	.....
22.....	.....	3.39	.....	4.20	4.20	4.20	4.18	3.96	3.52	2.98	2.67	2.45
23.....	3.20	3.38	3.69	4.25	.....	4.18	4.18	3.95	3.53	2.99	.....	2.45
24.....	3.21	.....	.....	4.22	4.22	4.40	4.22	4.03	3.50	2.99	2.62	2.46
25.....	3.25	3.40	3.70	4.22	4.25	4.18	4.16	3.96	3.47	2.91	2.53	.....
26.....	3.25	3.41	3.95	.....	4.30	4.25	4.16	3.88	3.40	.....	2.56	2.48
27.....	3.30	3.40	3.90	4.25	4.20	.....	4.15	3.85	3.40	2.95	2.57	2.53
28.....	3.30	3.40	3.92	4.22	4.25	4.15	4.17	3.96	3.40	.....	2.54	2.53
29.....	3.30	.....	3.97	4.21	.....	4.25	4.16	3.85	3.41	.....	2.48	2.53
30.....	3.30	3.42	4.02	.....	.....	4.22	4.21	3.80	3.41	2.88	.....	2.51
31.....	3.25	.....	4.00	4.19	.....	4.20	.....	3.83	.....	2.90	2.49	.....

Daily gage height, in feet, of Link River at Klamath Falls, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.	2.58	3.19	3.37	3.52	-----	4.72	4.80	4.64	-----	-----	-----	2.62
2.	-----	3.26	3.38	3.48	4.34	4.82	-----	-----	-----	-----	-----	-----
3.	2.51	3.20	3.40	-----	-----	4.92	-----	-----	-----	-----	2.90	2.66
4.	2.59	3.17	3.44	-----	4.32	4.90	-----	-----	-----	-----	-----	2.65
5.	2.55	3.20	3.43	3.58	4.35	4.80	-----	-----	4.10	-----	-----	-----
6.	2.58	3.18	3.43	3.70	4.53	-----	-----	-----	-----	-----	2.86	2.65
7.	2.58	-----	3.42	3.68	-----	4.78	-----	-----	-----	-----	2.85	2.64
8.	2.72	-----	3.53	-----	-----	4.82	-----	4.48	-----	-----	2.84	2.64
9.	2.68	-----	3.44	3.68	4.54	4.78	-----	-----	-----	-----	2.80	-----
10.	2.75	3.24	3.42	-----	-----	4.85	-----	-----	-----	3.42	2.79	-----
11.	-----	-----	3.40	-----	4.53	4.76	-----	-----	-----	-----	2.75	2.63
12.	-----	3.23	3.34	3.72	4.55	4.82	-----	-----	-----	3.35	2.75	2.60
13.	2.75	3.25	3.47	-----	-----	4.79	-----	-----	-----	-----	3.30	2.75
14.	-----	3.25	3.41	3.85	4.50	4.78	-----	-----	4.00	3.33	2.75	2.64
15.	-----	3.27	3.40	-----	-----	-----	-----	-----	-----	-----	-----	2.63
16.	3.01	3.25	3.43	3.87	-----	-----	-----	-----	-----	3.28	2.70	2.62
17.	-----	-----	3.48	-----	4.56	4.83	-----	-----	-----	-----	2.70	2.60
18.	-----	3.28	3.48	-----	4.67	4.79	-----	4.36	-----	-----	2.72	2.62
19.	3.16	3.50	3.50	4.08	4.72	4.80	-----	-----	-----	-----	2.70	2.64
20.	3.20	3.34	3.50	4.00	4.69	4.75	-----	-----	-----	3.20	2.68	2.66
21.	-----	3.30	-----	4.16	-----	4.30	-----	-----	-----	3.20	2.64	2.57
22.	3.11	3.30	3.48	4.15	-----	4.81	-----	-----	-----	-----	-----	2.64
23.	3.11	3.32	-----	4.15	4.69	4.78	-----	-----	-----	3.15	2.64	2.62
24.	3.14	3.35	3.48	-----	4.76	-----	-----	-----	3.75	-----	2.64	2.75
25.	3.23	3.35	3.50	-----	4.73	-----	-----	-----	-----	-----	2.63	2.69
26.	-----	3.34	3.48	4.25	-----	4.79	-----	-----	-----	-----	2.62	2.62
27.	-----	3.35	-----	4.26	-----	-----	-----	-----	-----	-----	2.60	2.67
28.	3.33	3.36	-----	-----	4.71	-----	-----	-----	3.68	-----	2.60	2.67
29.	3.30	-----	3.46	4.44	-----	-----	-----	4.34	-----	-----	2.60	2.72
30.	3.16	3.25	-----	4.38	-----	-----	-----	-----	-----	-----	2.60	2.72
31.	3.18	-----	3.50	-----	-----	-----	-----	-----	-----	2.98	2.57	-----
1909-10.												
1.	2.75	2.93	4.04	4.3	4.2	4.45	5.4	5.05	4.15	3.35	2.75	2.55
2.	2.68	2.89	4.18	4.25	4.3	4.45	5.7	5.05	4.1	3.35	2.75	2.55
3.	2.67	2.89	4.18	4.25	4.3	4.5	5.4	5.1	4.1	3.5	2.8	2.6
4.	2.69	2.92	4.20	4.25	4.25	4.55	5.4	5.1	4.15	3.35	2.8	2.6
5.	2.68	2.94	4.22	4.25	4.2	4.6	5.4	5.05	4.1	3.3	2.75	2.6
6.	2.69	2.94	4.23	4.25	4.2	4.65	5.35	5.05	4.1	3.3	2.7	2.55
7.	2.71	3.02	4.32	4.25	4.2	4.7	5.35	5.0	4.0	3.25	2.75	2.55
8.	2.75	3.19	4.32	4.25	4.2	4.75	5.4	4.95	4.0	3.2	2.75	2.6
9.	2.72	3.04	4.32	4.25	4.25	4.75	5.4	4.95	4.0	3.2	2.75	2.6
10.	2.73	3.01	4.32	4.25	4.2	4.85	5.4	4.9	4.0	3.2	2.75	2.55
11.	2.75	3.04	4.32	4.25	4.2	4.9	5.4	4.75	4.0	3.2	2.7	2.6
12.	2.75	3.04	4.34	4.4	4.2	4.9	5.35	4.75	4.0	3.2	2.65	2.6
13.	-----	3.04	4.34	4.4	4.25	4.95	5.35	4.55	4.0	3.2	2.65	2.6
14.	-----	3.06	4.30	4.3	4.2	5.0	5.3	4.45	3.95	3.15	2.65	2.55
15.	2.78	3.06	4.31	4.25	4.2	5.0	5.3	4.45	3.85	3.15	2.6	2.55
16.	-----	3.09	4.27	4.2	4.2	5.05	5.3	4.55	3.75	3.05	2.6	2.6
17.	2.80	3.09	4.24	4.2	4.25	5.05	5.35	4.5	3.8	3.0	2.65	2.55
18.	2.85	3.09	4.23	4.15	4.2	5.2	5.4	4.55	3.8	3.0	2.65	2.55
19.	2.89	3.15	4.25	4.2	4.2	5.15	5.35	4.5	3.8	3.0	2.6	2.7
20.	2.83	3.38	4.24	4.2	4.25	5.15	5.3	4.5	3.6	3.0	2.6	2.65
21.	2.80	3.42	4.23	4.15	4.3	5.2	5.25	4.45	3.55	3.05	2.6	2.6
22.	2.81	3.54	4.23	4.2	4.25	5.2	5.25	4.45	3.55	2.95	2.6	2.6
23.	2.81	3.61	4.23	4.2	4.25	5.3	5.25	4.45	3.5	2.95	2.55	2.6
24.	2.81	3.66	4.24	4.25	4.3	5.3	5.2	4.45	3.5	2.95	2.55	2.6
25.	2.82	3.71	4.22	4.3	4.35	5.35	5.3	4.35	3.5	2.95	2.55	2.6
26.	2.84	3.78	4.21	4.25	4.3	5.4	5.15	4.35	3.5	2.9	2.6	2.6
27.	2.88	3.84	4.20	4.2	4.3	5.4	5.25	4.25	3.45	2.9	2.55	2.6
28.	2.84	3.89	4.20	4.2	4.45	5.35	5.15	4.2	3.5	2.9	2.6	2.65
29.	2.84	3.94	4.20	4.2	-----	5.4	5.05	4.15	3.45	2.9	2.6	2.6
30.	2.88	3.99	4.24	4.25	-----	5.4	5.1	4.1	3.45	2.9	2.6	2.6
31.	2.93	-----	4.26	4.2	-----	5.4	-----	4.2	-----	2.85	2.6	-----

Daily gage height, in feet, of Link River at Klamath Falls, Oreg., for 1904-1910—Contd.

Gage at foot of rapids.

Day.	Mar.	Apr.	May.	June.	Day.	Mar.	Apr.	May.	June.
1908.					1908.				
1.....		2.82	2.00	2.48	16.....	2.75	2.65	2.55	.....
2.....		2.80	2.70		17.....	2.81	2.53	2.25	.....
3.....		3.20		2.60	18.....	2.65	2.65	2.60	.....
4.....		2.80	2.65	2.40	19.....	2.70	2.70	2.50	.....
5.....			2.60	2.40	20.....	2.80	2.74	2.54	.....
6.....			2.30	2.22	21.....	2.70	2.60	2.58	.....
7.....			2.55	2.25	22.....	2.70	2.62	.....	.....
8.....		2.50	2.63		23.....	2.63		2.55	.....
9.....	2.65	2.72	2.68		24.....		2.90	2.60	.....
10.....			2.60		25.....	2.85	2.75	2.66	.....
11.....	2.65	2.74	2.75		26.....	2.85	2.74	2.54	.....
12.....	2.68		2.70		27.....		2.84	2.46	.....
13.....	2.60		2.54		28.....	2.83		2.60	.....
14.....	2.66	2.66	2.40		29.....		2.65	2.75	.....
15.....		2.60			30.....	2.92		2.68	.....
					31.....	2.90		2.45	.....

Friez automatic gage.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1908.					1908.				
1.....		1.63	1.21	0.80	16.....	1.90	1.38	1.00	1.00
2.....		1.64	1.22	.77	17.....	1.86	1.40	1.01	.90
3.....		1.58	1.16	.76	18.....	1.90	1.37	1.00	.90
4.....		1.62	1.16	.74	19.....	1.82	1.35	1.02	.95
5.....		1.58	1.15	.80	20.....	1.52	1.30	1.02	.97
6.....	1.84	1.54	1.13	.80	21.....	1.72	1.36	1.02	.96
7.....	1.84	1.46	1.10	.91	22.....	1.68	1.30	1.03	.98
8.....	1.84	1.46	1.08	.86	23.....		1.30	1.02	1.16
9.....	1.82	1.46	1.10	.86	24.....		1.30	1.10	1.10
10.....	1.80	1.46	1.08	.86	25.....		1.34	.90	1.00
11.....	1.80	1.42	1.06	.83	26.....		1.30	.87	.94
12.....	1.78	1.40	1.13	.87	27.....	1.78	1.26	.87	.93
13.....	1.77	1.36	1.16	.90	28.....	1.68	1.22	.85	.94
14.....	1.80	1.42	1.08	.89	29.....	1.65	1.25	.98	.94
15.....	1.86	1.50	1.02	.94	30.....	1.66	1.17	.80	.96
					31.....		1.14	.80	.....

Daily gage height, in feet, of Link River at Klamath Falls, Oreg., for 1904-1910—Contd.

[Friez automatic gage.]

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	1.20	-----	1.90	1.68	2.10	2.75	-----	2.46	2.25	1.60	1.25	0.95
2	1.30	1.55	1.95	1.69	2.00	2.80	-----	2.45	2.25	1.55	1.12	.95
3	1.05	1.62	1.95	1.70	2.70	-----	-----	2.44	2.24	1.65	1.14	.92
4	1.00	1.60	1.90	1.71	2.60	-----	-----	2.60	2.32	1.70	1.15	.95
5	.96	1.62	1.79	1.82	2.70	-----	-----	2.43	2.30	1.58	1.23	.95
6	.98	1.64	1.68	1.85	2.50	2.90	-----	2.48	2.25	1.60	1.23	.93
7	.96	-----	1.70	1.85	2.75	2.90	-----	2.43	-----	1.48	1.10	.92
8	.94	-----	1.75	1.85	2.75	2.98	-----	2.40	-----	1.51	1.10	.92
9	1.00	-----	1.65	2.05	2.73	3.00	-----	2.42	-----	1.52	.93	1.03
10	1.16	-----	1.60	1.98	2.73	3.00	-----	2.40	-----	1.49	.92	1.12
11	1.35	-----	1.65	1.97	2.72	2.95	2.70	2.45	-----	1.54	.96	.98
12	1.30	-----	1.75	1.96	2.70	2.95	2.65	2.37	-----	1.52	1.04	.98
13	1.20	-----	-----	1.96	-----	2.88	2.68	2.38	-----	1.55	.98	.95
14	.80	-----	1.70	-----	2.65	2.75	2.68	2.38	-----	1.58	1.00	.95
15	.58	-----	1.70	2.05	2.65	2.80	2.65	2.38	-----	1.46	1.02	.90
16	.62	-----	1.55	2.12	2.75	2.75	2.60	-----	-----	1.48	.98	1.00
17	.70	-----	1.70	2.12	2.70	2.85	2.60	-----	-----	1.48	1.00	1.00
18	-----	-----	1.70	2.13	2.68	2.70	2.75	2.40	-----	1.48	1.02	.95
19	1.95	-----	1.70	2.08	2.75	2.70	2.80	2.44	2.00	1.38	1.00	1.00
20	1.92	-----	1.70	1.92	2.75	2.10	2.80	2.42	1.90	1.24	1.13	1.05
21	1.52	1.60	1.72	2.15	3.10	2.65	2.64	2.38	1.85	1.28	1.00	.92
22	1.58	1.65	1.73	-----	2.88	2.70	2.57	2.30	1.79	1.30	1.08	.88
23	1.59	1.65	1.74	2.50	2.70	2.65	2.58	2.28	1.81	1.84	.97	.70
24	1.60	1.65	1.73	2.25	2.70	2.65	-----	2.25	1.86	1.35	.97	.71
25	1.62	1.60	1.72	2.40	2.93	2.70	-----	2.32	1.76	1.38	.94	.91
26	1.62	1.52	-----	2.65	2.92	2.68	-----	2.33	1.71	1.40	1.03	1.05
27	1.60	1.54	-----	2.68	2.88	2.69	2.60	2.30	1.80	1.25	1.08	.92
28	1.54	1.58	-----	2.67	2.85	-----	2.60	2.18	1.58	1.14	.85	.75
29	1.35	1.65	-----	2.48	-----	-----	2.50	2.15	.80	1.12	.95	.90
30	1.56	1.62	1.70	2.40	-----	-----	2.48	2.19	1.57	1.08	.90	.88
31	1.56	-----	1.69	2.10	-----	-----	-----	2.21	-----	1.20	.90	-----
1909-10.												
1	1.05	1.24	-----	2.42	2.27	2.36	3.30	2.80	2.75	1.90	1.15	.90
2	1.00	1.34	-----	2.40	2.24	2.48	3.55	2.78	2.48	1.90	1.10	.91
3	.98	1.36	-----	2.37	2.24	2.55	3.35	2.80	2.51	2.20	1.00	1.00
4	.90	1.36	-----	2.34	2.24	2.65	3.32	2.71	2.55	2.15	1.10	.92
5	.93	1.37	-----	2.31	2.04	2.75	3.35	2.72	2.46	2.15	.98	.89
6	1.20	-----	2.60	2.28	2.04	2.84	3.25	2.68	2.50	2.20	1.08	.98
7	.90	1.10	2.59	2.28	2.04	2.89	3.22	2.48	2.45	2.35	1.02	1.00
8	.90	1.30	2.59	2.37	2.03	2.97	3.22	2.40	2.41	2.32	1.02	.88
9	1.20	1.40	2.59	2.36	2.03	3.01	2.78	2.15	2.41	2.35	.95	.88
10	1.22	1.65	2.60	2.35	2.02	3.05	3.05	2.17	2.60	2.35	.95	.95
11	1.30	-----	-----	2.31	2.02	3.08	3.22	2.25	2.70	2.52	.93	1.08
12	1.30	-----	-----	2.20	2.07	3.14	3.22	2.28	2.56	2.50	1.02	.99
13	1.44	-----	-----	2.18	2.08	3.15	3.15	2.26	2.60	2.42	1.08	.80
14	1.42	-----	-----	2.18	2.10	3.15	3.10	2.29	2.20	2.05	1.03	.89
15	1.40	-----	-----	2.18	2.09	3.17	3.08	2.25	2.05	2.20	1.06	.87
16	.95	-----	-----	2.15	2.06	3.19	3.10	2.20	1.76	2.40	1.08	.85
17	.90	-----	-----	2.12	2.05	3.18	3.06	2.40	1.65	2.70	.98	.98
18	.70	-----	2.60	2.12	2.08	2.95	2.90	2.70	1.50	2.45	.85	1.22
19	.80	-----	2.58	2.11	2.10	3.18	3.10	2.65	1.46	2.20	.80	1.19
20	.75	-----	2.56	2.08	2.10	3.24	3.08	2.53	1.65	1.60	.75	.89
21	1.10	-----	2.54	2.09	2.07	3.28	3.04	2.53	1.80	1.25	.88	.88
22	1.20	-----	2.53	2.14	2.06	3.42	2.98	2.53	1.85	1.22	.88	.92
23	1.20	-----	2.51	2.14	2.06	3.40	2.92	2.35	1.95	1.20	.94	.98
24	-----	-----	2.50	2.13	2.15	3.45	2.80	2.58	1.90	1.20	1.20	1.02
25	-----	-----	-----	2.17	2.15	3.25	2.85	2.45	2.00	1.20	.91	1.10
26	-----	-----	-----	2.18	2.13	3.20	2.90	2.38	2.20	1.20	.82	1.02
27	-----	-----	2.50	2.19	2.20	3.50	2.95	2.47	2.24	1.20	.90	1.00
28	-----	-----	2.40	2.21	2.30	3.45	2.86	2.22	2.50	1.10	.91	1.00
29	-----	-----	2.38	2.25	-----	3.40	2.89	2.45	2.40	1.06	1.10	1.02
30	1.20	-----	2.38	2.26	-----	3.41	2.88	2.45	2.10	1.10	.88	1.00
31	1.15	-----	2.40	2.33	-----	3.40	-----	2.65	-----	1.10	.90	-----

Daily discharge, in second-feet, of Link River at Klamath Falls, Oreg., for 1904-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1904.						1904.					
1.....		8,020	5,140	2,980	1,800	16.....	8,890	6,820	4,150	2,310	1,640
2.....		8,140	5,040	2,900	1,800	17.....	8,800	6,710	4,060	2,240	1,640
3.....		7,900	4,930	2,820	1,800	18.....	9,020	6,480	3,960	2,240	1,580
4.....		7,900	4,930	2,740	1,740	19.....	8,890	6,360	3,860	2,180	1,580
5.....		7,780	4,830	2,740	1,740	20.....	8,890	6,250	3,770	2,180	1,580
6.....		7,660	4,730	2,660	1,740	21.....	8,890	6,250	3,770	2,110	1,580
7.....		7,540	4,730	2,660	1,740	22.....	8,760	6,140	3,680	2,110	1,740
8.....		7,540	4,630	2,660	1,740	23.....	8,640	5,900	3,680	2,040	1,690
9.....		7,420	4,630	2,590	1,690	24.....	8,640	5,790	3,680	2,040	1,640
10.....		7,300	4,530	2,520	1,690	25.....	8,520	5,680	3,580	2,040	1,580
11.....		7,180	4,530	2,520	1,690	26.....	8,390	5,680	3,490	1,980	1,580
12.....		7,180	4,440	2,450	1,690	27.....	8,390	5,570	3,400	1,980	1,540
13.....		7,060	4,340	2,450	1,640	28.....	8,390	5,460	3,320	1,920	1,580
14.....		6,940	4,340	2,380	1,640	29.....	8,260	5,350	3,230	1,860	1,480
15.....	9,020	6,940	4,240	2,380	1,640	30.....	8,260	5,240	3,140	1,860	1,480
						31.....	8,140	.....	3,060	1,860	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	1,580	1,880	1,860	2,590	2,740	3,060	3,230	2,740	2,380	1,740	1,140	1,040
2.....	1,580	1,740	1,920	2,590	3,060	3,060	3,230	2,740	2,240	1,740	1,120	1,040
3.....	1,580	1,740	1,920	2,590	3,060	3,060	3,230	2,740	2,240	1,580	1,090	1,020
4.....	1,580	1,740	1,920	2,590	3,060	3,060	3,230	2,740	2,310	1,580	1,070	1,040
5.....	1,580	1,740	1,980	2,590	3,230	3,060	3,230	2,740	2,280	1,540	1,070	1,020
6.....	1,580	1,800	2,040	2,590	3,230	3,060	3,230	2,740	2,280	1,580	1,070	1,040
7.....	1,580	1,800	2,040	2,590	3,060	3,060	3,230	2,740	2,190	1,480	985	1,020
8.....	1,640	1,800	2,040	2,590	3,060	3,060	3,230	2,740	2,280	1,480	1,050	1,020
9.....	1,690	1,800	2,040	2,590	3,060	3,060	3,230	2,740	2,240	1,540	1,040	1,020
10.....	1,690	1,800	2,040	2,590	3,230	3,060	3,230	2,740	2,180	1,540	1,040	1,050
11.....	1,690	1,860	2,040	2,590	3,230	3,060	3,230	2,740	2,180	1,540	1,030	1,050
12.....	1,640	1,860	2,040	2,590	3,230	3,060	3,230	2,740	2,150	1,480	1,040	1,020
13.....	1,640	1,920	2,010	2,590	3,230	3,060	3,230	2,740	2,110	1,480	1,040	1,020
14.....	1,690	1,800	2,010	2,590	3,230	3,060	3,230	2,740	2,040	1,390	1,030	1,040
15.....	1,690	1,800	2,180	2,590	3,230	3,060	3,230	2,590	1,920	1,340	1,040	1,040
16.....	1,740	1,800	2,180	2,590	3,230	3,060	3,230	2,590	2,040	1,300	1,040	1,010
17.....	1,690	1,800	2,180	2,590	3,060	3,060	3,230	2,590	1,940	1,220	1,040	985
18.....	1,690	1,800	2,180	2,590	3,060	3,060	3,140	2,520	1,930	1,220	1,050	1,010
19.....	1,740	1,860	2,180	2,590	3,060	3,060	3,060	2,520	1,920	1,300	1,040	1,040
20.....	1,740	1,800	2,180	2,590	3,060	3,060	3,060	2,520	1,910	1,220	1,040	1,040
21.....	1,740	1,800	2,180	2,590	3,060	3,060	2,980	2,450	1,860	1,220	1,040	1,040
22.....	1,740	1,860	2,240	2,590	3,060	3,060	2,980	2,450	1,800	1,260	1,040	1,020
23.....	1,740	1,860	2,310	2,590	3,060	3,060	2,980	2,450	1,800	1,180	1,040	1,040
24.....	1,740	1,920	2,380	2,740	3,060	3,060	2,900	2,450	1,800	1,180	1,040	1,080
25.....	1,740	1,920	2,400	2,740	3,060	3,060	2,900	2,450	1,690	1,180	1,040	1,010
26.....	1,740	1,920	2,420	2,740	3,060	3,060	2,900	2,450	1,690	1,180	1,090	1,020
27.....	1,740	1,920	2,460	2,740	3,060	3,060	2,900	2,450	1,690	1,150	1,150	1,040
28.....	1,740	1,920	2,480	2,590	3,060	3,230	2,820	2,450	1,690	1,150	1,040	1,050
29.....	1,740	1,920	2,500	2,740	.....	3,400	2,820	2,450	1,690	1,140	1,040	1,060
30.....	1,740	1,980	2,530	2,740	.....	3,230	2,820	2,380	1,640	1,140	1,060	1,060
31.....	1,740	.....	2,560	2,740	.....	3,230	.....	2,380	.....	1,140	1,010	.....

Daily discharge, in second-feet, of Link River at Klamath Falls, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1,090	1,160	1,540	1,800	1,980	2,110	2,820	4,150	3,860	3,060	1,800	1,220
2.....	1,060	1,150	1,580	1,740	1,980	2,310	2,740	4,250	3,860	2,980	1,800	1,180
3.....	1,090	1,160	1,580	1,690	1,980	2,240	2,740	4,150	3,960	3,060	1,800	1,220
4.....	1,090	1,180	1,480	1,800	1,980	2,040	2,740	4,060	3,960	3,060	1,740	1,220
5.....	1,220	1,160	1,480	1,800	1,980	2,040	2,740	4,150	4,060	2,960	1,740	1,220
6.....	1,220	1,200	1,480	1,740	1,920	2,040	2,900	4,150	3,770	2,900	1,690	1,180
7.....	1,260	1,200	1,500	1,740	1,920	2,040	2,980	4,060	3,770	2,820	1,640	1,260
8.....	1,090	1,290	1,520	1,740	1,920	2,040	3,140	4,060	3,860	2,900	1,580	1,260
9.....	1,220	1,290	1,520	1,800	1,920	2,110	3,060	4,150	3,770	2,820	1,580	1,220
10.....	1,150	1,280	1,560	1,800	1,920	2,110	3,230	4,250	4,060	2,740	1,580	1,150
11.....	1,120	1,290	1,540	1,800	1,920	2,040	3,230	4,250	4,150	2,660	1,580	1,150
12.....	1,150	1,220	1,540	1,800	1,920	2,240	3,230	3,960	3,960	2,660	1,480	1,180
13.....	1,150	1,260	1,560	1,800	1,920	2,310	3,230	3,960	3,680	2,660	1,440	1,150
14.....	1,150	1,260	1,520	1,920	1,920	2,310	3,400	4,340	3,580	2,520	1,480	1,150
15.....	1,090	1,260	1,630	1,860	1,980	2,380	3,490	4,150	3,770	2,520	1,440	1,150
16.....	1,150	1,220	1,540	2,180	1,920	2,310	3,680	3,960	3,680	2,520	1,440	1,180
17.....	1,150	1,220	1,620	2,180	1,980	2,310	3,770	3,960	3,580	2,520	1,440	1,180
18.....	1,150	1,220	1,600	2,180	2,110	2,380	3,770	4,440	3,490	2,450	1,390	1,180
19.....	1,150	1,480	1,600	2,240	1,980	2,310	3,770	4,060	3,400	2,380	1,390	1,180
20.....	1,180	1,390	1,540	2,180	1,980	2,380	3,860	3,960	3,490	2,380	1,340	1,180
21.....	1,180	1,580	1,560	2,240	2,040	2,450	3,960	3,860	3,320	2,380	1,390	1,180
22.....	1,140	1,480	1,620	2,040	2,040	2,380	4,060	3,770	3,400	2,240	1,300	1,150
23.....	1,150	1,440	1,580	2,110	2,110	2,660	4,150	3,860	3,400	2,180	1,260	1,150
24.....	1,180	1,390	1,600	2,110	2,040	2,380	4,060	3,960	3,400	2,110	1,300	1,220
25.....	1,160	1,480	1,580	2,040	2,040	2,520	4,060	4,340	3,320	2,110	1,300	1,220
26.....	1,150	1,540	1,640	2,040	2,240	2,450	4,060	4,150	3,320	2,040	1,340	1,180
27.....	1,210	1,440	1,650	2,040	2,040	2,450	4,250	4,060	3,230	1,980	1,300	1,180
28.....	1,200	1,440	1,620	2,040	1,920	2,520	4,340	4,150	3,230	2,040	1,220	1,180
29.....	1,200	1,690	1,690	2,040	.....	2,590	4,150	3,960	3,140	1,920	1,300	1,180
30.....	1,160	1,480	1,840	2,040	.....	2,740	4,060	3,960	3,140	1,860	1,220	1,180
31.....	1,220	.....	1,840	1,980	.....	2,740	.....	3,960	.....	1,860	1,220	.....
1906-7.												
1.....	1,180	1,300	1,580	1,920	2,310	4,190	5,350	5,530	4,690	3,090	1,860	1,440
2.....	1,220	1,580	1,540	2,240	2,380	4,150	5,530	5,570	4,630	3,140	1,820	1,440
3.....	1,150	1,690	1,540	2,180	2,590	4,240	5,390	5,460	4,440	3,060	1,800	1,440
4.....	1,150	1,260	1,580	2,180	2,820	4,340	5,680	5,550	4,380	3,030	1,780	1,440
5.....	1,180	1,260	1,580	2,110	2,820	4,380	5,460	5,460	4,300	2,930	1,740	1,440
6.....	1,180	1,260	1,580	2,110	2,930	4,440	5,590	5,390	4,240	2,930	1,710	1,440
7.....	1,180	1,260	1,740	2,110	3,060	4,380	5,590	5,530	4,150	2,870	1,670	1,390
8.....	1,180	1,300	1,580	2,110	3,140	4,340	5,610	5,390	4,060	2,820	1,640	1,390
9.....	1,180	1,340	1,580	2,180	3,230	4,340	5,570	5,390	4,000	2,740	1,640	1,390
10.....	1,180	1,340	1,740	2,180	3,320	4,340	5,610	5,570	3,960	2,710	1,580	1,390
11.....	1,180	1,340	1,690	2,180	3,440	4,440	5,680	5,390	4,110	2,710	1,580	1,390
12.....	1,150	1,390	1,690	2,180	3,580	4,440	5,770	5,240	4,060	2,660	1,610	1,390
13.....	1,150	1,440	1,690	2,180	3,680	4,240	5,790	5,100	3,960	2,620	1,560	1,390
14.....	1,220	1,390	1,690	2,180	3,770	4,240	5,750	5,140	3,920	2,480	1,540	1,390
15.....	1,180	1,480	1,800	2,200	3,770	4,340	5,680	5,140	3,810	2,420	1,540	1,390
16.....	1,180	1,480	1,740	2,200	3,770	4,240	5,680	5,100	3,810	2,380	1,540	1,390
17.....	1,180	1,540	1,800	2,240	3,860	4,340	5,680	4,970	3,810	2,310	1,500	1,390
18.....	1,180	1,480	1,740	2,240	3,960	4,530	5,790	5,040	3,860	2,280	1,480	1,370
19.....	1,180	1,480	1,690	2,240	3,960	4,770	5,750	4,930	3,810	2,280	1,480	1,390
20.....	1,220	1,480	1,800	2,240	3,960	4,690	5,680	4,770	3,730	2,280	1,470	1,410
21.....	1,220	1,540	1,800	2,310	3,960	5,040	5,790	4,890	3,680	2,200	1,440	1,390
22.....	1,220	1,440	1,920	2,310	3,960	5,390	5,790	4,830	3,580	2,180	1,440	1,390
23.....	1,220	1,540	1,800	2,280	3,960	4,830	5,750	4,830	3,580	2,180	1,440	1,440
24.....	1,220	1,580	1,800	2,200	4,150	4,970	5,750	4,770	3,490	2,150	1,580	1,410
25.....	1,220	1,580	1,800	2,180	4,240	5,100	5,680	4,730	7,710	2,110	1,500	1,470
26.....	1,220	1,580	1,920	2,180	4,150	5,100	5,570	4,690	3,490	2,110	1,480	1,370
27.....	1,260	1,580	1,920	2,180	4,150	5,180	5,610	4,730	3,400	2,040	1,470	1,410
28.....	1,260	1,580	1,920	2,180	4,000	5,180	5,530	4,730	3,320	2,040	1,480	1,390
29.....	1,260	1,580	1,920	2,180	.....	5,390	5,460	4,690	3,260	1,980	1,470	1,390
30.....	1,220	1,580	1,920	2,200	.....	5,310	5,390	4,630	3,260	1,980	1,440	1,440
31.....	1,300	.....	1,920	2,310	.....	5,350	.....	4,690	.....	1,920	1,440	.....

Daily discharge, in second-feet, of Link River at Klamath Falls, Oreg., for 1904-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1	1,410	1,560	1,720	2,450	3,060	2,790	3,290	2,690	2,510	1,780	1,180	770
2	1,390	1,580	1,740	2,460	3,230	2,770	3,170	2,670	2,530	1,790	1,200	740
3	1,440	1,580	1,780	2,520	3,060	2,740	3,230	2,670	2,420	1,700	1,120	730
4	1,440	1,580	1,800	2,480	2,960	2,770	3,450	2,720	2,260	1,760	1,120	710
5	1,390	1,560	1,690	2,450	2,960	2,740	3,230	2,730	2,130	1,700	1,110	770
6	1,440	1,580	1,800	2,510	3,230	2,760	3,410	2,620	2,090	1,640	1,090	770
7	1,440	1,650	1,760	2,590	2,920	2,600	3,540	2,610	2,090	1,520	1,050	891
8	1,390	1,620	1,750	2,710	3,230	2,610	3,250	2,970	2,090	1,520	1,030	836
9	1,390	1,580	1,740	2,620	3,020	2,620	3,050	2,770	2,060	1,520	1,050	836
10	1,390	1,640	1,820	2,560	2,800	2,530	2,870	2,600	2,030	1,520	1,030	836
11	1,440	1,640	1,790	2,590	2,820	2,580	3,020	2,600	2,030	1,470	1,010	803
12	1,410	1,650	1,900	2,600	2,800	2,630	3,050	2,750	2,000	1,440	1,090	847
13	1,410	1,610	1,940	2,600	2,840	2,380	2,960	2,540	1,980	1,380	1,120	880
14	1,470	1,580	1,860	2,620	2,820	2,530	3,020	2,230	2,030	1,470	1,030	869
15	1,440	1,650	1,880	2,650	2,860	2,440	2,770	2,380	2,120	1,580	962	924
16	1,440	1,610	1,900	2,590	2,900	2,610	2,670	2,430	2,180	1,410	940	990
17	1,440	1,640	1,920	2,620	2,770	2,590	2,560	2,380	2,120	1,440	951	880
18	1,440	1,610	1,920	2,740	2,800	2,780	2,650	2,300	2,180	1,400	940	880
19	1,450	1,650	2,010	2,740	2,740	2,670	2,860	2,520	2,060	1,370	962	935
20	1,460	1,650	1,980	2,740	2,770	2,650	2,710	2,490	1,610	1,300	962	957
21	1,470	1,680	1,920	2,740	2,740	2,760	2,690	2,750	1,910	1,380	962	946
22	1,470	1,680	1,980	2,740	2,740	2,650	2,700	2,640	1,850	1,300	973	968
23	1,480	1,670	2,030	2,820	2,760	2,650	2,640	2,580	1,880	1,300	962	1,170
24	1,500	1,680	2,040	2,770	2,770	2,570	2,960	2,880	1,910	1,300	1,050	1,100
25	1,540	1,690	2,040	2,770	2,820	2,700	3,000	2,900	1,940	1,360	830	990
26	1,540	1,700	2,380	2,800	2,900	3,020	2,970	2,570	1,970	1,300	797	924
27	1,580	1,690	2,310	2,820	2,740	3,100	3,180	2,550	2,000	1,250	797	913
28	1,580	1,690	2,340	2,770	2,820	3,120	3,180	2,470	1,850	1,200	775	924
29	1,580	1,700	2,410	2,760	2,800	2,970	3,000	2,620	1,800	1,240	918	924
30	1,580	1,710	2,480	2,740	.....	3,070	2,670	2,790	1,820	1,130	720	946
31	1,540	.....	2,450	2,720	.....	3,180	.....	2,660	.....	1,100	720	.....
1908-9.												
1	1,220	1,720	2,260	1,980	2,620	3,680	3,580	3,200	2,860	1,860	1,360	1,020
2	1,350	1,730	2,330	2,000	2,460	3,770	3,580	3,180	2,860	1,780	1,200	1,020
3	1,040	1,840	2,330	2,010	3,600	3,810	3,590	3,160	2,840	1,940	1,230	982
4	990	1,800	2,260	2,020	3,430	3,850	3,590	3,430	2,970	2,010	1,240	1,020
5	946	1,840	2,090	2,190	3,600	3,900	3,590	3,150	2,940	1,830	1,340	1,020
6	968	1,860	1,920	2,240	3,260	3,940	3,590	3,230	2,860	1,860	1,340	993
7	946	1,860	1,960	2,240	3,680	3,940	3,590	3,150	2,830	1,680	1,180	982
8	924	1,850	2,030	2,240	3,680	4,080	3,590	3,100	2,800	1,720	1,180	982
9	990	1,850	1,880	2,540	3,650	4,110	3,600	3,130	2,770	1,740	993	1,100
10	1,170	1,840	1,800	2,430	3,650	4,110	3,600	3,100	2,740	1,700	982	1,200
11	1,420	1,840	1,880	2,420	3,630	4,020	3,600	3,180	2,710	1,770	1,030	1,050
12	1,350	1,840	2,030	2,400	3,600	4,020	3,520	3,050	2,680	1,740	1,110	1,050
13	1,220	1,830	2,000	2,400	3,560	3,910	3,570	3,070	2,650	1,780	1,050	1,020
14	770	1,830	1,960	2,470	3,520	3,680	3,570	3,070	2,620	1,830	1,070	1,020
15	550	1,820	1,960	2,540	3,520	3,770	3,520	3,070	2,580	1,650	1,090	960
16	590	1,820	1,730	2,650	3,680	3,680	3,430	3,080	2,550	1,680	1,050	1,070
17	670	1,820	1,960	2,650	3,600	3,860	3,430	3,090	2,520	1,680	1,070	1,070
18	1,480	1,810	1,960	2,670	3,570	3,600	3,680	3,100	2,490	1,680	1,090	1,020
19	2,300	1,810	1,960	2,590	3,680	3,600	3,770	3,160	2,460	1,540	1,070	1,070
20	2,260	1,800	1,960	2,340	3,680	2,620	3,770	3,130	2,310	1,350	1,220	1,120
21	1,660	1,800	1,980	2,700	4,280	3,520	3,500	3,070	2,240	1,400	1,070	982
22	1,750	1,880	2,000	2,980	3,910	3,600	3,380	2,940	2,140	1,430	1,160	938
23	1,760	1,880	2,020	3,260	3,600	3,520	3,400	2,910	2,180	1,490	1,040	750
24	1,780	1,880	2,000	2,860	3,600	3,520	3,400	2,860	2,250	1,500	1,040	760
25	1,810	1,800	1,980	3,100	3,990	3,600	3,410	2,970	2,100	1,540	1,000	971
26	1,810	1,680	1,980	3,520	3,970	3,570	3,420	2,990	2,020	1,570	1,100	1,120
27	1,780	1,720	1,970	3,570	3,910	3,580	3,430	2,940	2,160	1,360	1,160	982
28	1,690	1,780	1,970	3,550	3,860	3,580	3,430	2,750	1,830	1,230	905	800
29	1,420	1,880	1,960	3,230	.....	3,580	3,260	2,700	850	1,200	1,020	960
30	1,720	1,840	1,960	3,100	.....	3,580	3,230	2,760	1,820	1,160	960	938
31	1,720	.....	1,940	2,620	.....	3,580	.....	2,500	.....	1,300	960	.....

Daily discharge, in second-feet, of Link River at Klamath Falls., Oreg., for 1904-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1,120	1,350	2,510	3,130	2,890	3,040	4,630	4,150	2,660	1,640	1,390	1,070
2.....	1,070	1,490	2,710	3,100	2,840	3,230	5,080	4,110	2,590	1,640	1,320	1,080
3.....	1,050	1,510	2,710	3,050	2,840	3,340	5,210	4,150	2,590	1,640	1,190	1,190
4.....	960	1,510	2,740	3,000	2,840	3,520	5,150	3,980	2,660	1,800	1,320	1,090
5.....	993	1,530	2,770	2,960	2,520	3,680	5,210	4,000	2,590	1,580	1,170	1,060
6.....	1,300	1,360	3,430	2,910	2,520	3,840	5,010	3,920	2,590	1,580	1,290	1,170
7.....	960	1,180	3,410	2,910	2,520	3,920	4,950	3,560	2,450	1,540	1,220	1,190
8.....	960	1,480	3,410	3,050	2,510	4,060	4,950	3,420	2,450	1,480	1,220	1,050
9.....	1,300	1,340	3,410	3,040	2,510	4,130	4,110	2,970	2,450	1,480	1,130	1,050
10.....	1,330	1,310	3,430	3,020	2,490	4,200	4,620	3,010	2,450	1,480	1,130	1,130
11.....	1,430	1,340	2,930	2,960	2,490	4,250	4,950	3,150	2,450	1,480	1,110	1,290
12.....	1,430	1,340	2,960	2,780	2,570	4,350	4,950	3,200	2,450	1,480	1,220	1,180
13.....	1,630	1,340	2,960	2,750	2,590	4,360	4,820	3,170	2,450	1,480	1,290	950
14.....	1,600	1,350	2,900	2,750	2,620	4,360	4,720	3,230	2,380	1,440	1,230	1,060
15.....	1,570	1,350	2,920	2,750	2,600	4,400	4,680	3,150	2,240	1,440	1,270	1,030
16.....	1,020	1,380	2,850	2,700	2,560	4,430	4,720	3,060	2,110	1,340	1,290	1,010
17.....	960	1,380	2,800	2,650	2,540	4,420	4,640	3,200	2,180	1,300	1,170	1,170
18.....	750	1,380	3,430	2,650	2,590	4,020	4,340	3,320	2,180	1,300	1,010	1,490
19.....	850	1,440	3,400	2,640	2,620	4,420	4,720	3,230	2,180	1,300	950	1,450
20.....	800	1,670	3,360	2,590	2,620	4,520	4,680	3,230	1,920	1,300	895	1,060
21.....	1,180	1,710	3,330	2,600	2,570	4,590	4,610	3,140	1,860	1,340	1,050	1,050
22.....	1,300	1,850	3,310	2,680	2,560	4,850	4,490	3,140	1,860	1,490	1,050	1,090
23.....	1,300	1,930	3,280	2,680	2,560	4,810	4,380	3,140	1,800	1,460	1,120	1,170
24.....	1,300	2,000	3,260	2,670	2,700	4,900	4,150	3,140	1,800	1,460	1,460	1,220
25.....	1,300	2,060	3,260	2,730	2,700	4,540	4,240	2,980	1,800	1,460	1,080	1,320
26.....	1,300	2,150	3,260	2,750	2,670	4,450	4,340	2,980	1,800	1,460	974	1,220
27.....	1,300	2,230	3,260	2,760	2,780	4,990	4,440	2,820	1,740	1,460	1,070	1,190
28.....	1,300	2,300	3,100	2,800	2,940	4,900	4,260	2,740	1,800	1,320	1,080	1,190
29.....	1,300	2,370	3,070	2,860	-----	4,810	4,320	2,660	1,740	1,270	1,320	1,220
30.....	1,120	2,440	3,070	2,880	-----	4,830	4,300	2,590	1,740	1,320	1,050	1,190
31.....	1,240	-----	3,100	2,990	-----	4,810	-----	2,740	-----	1,320	1,070	-----

NOTE.—Daily discharge determined from rating curves applicable as follows: May 15, 1904, to Mar. 6, 1908, poorly defined; Mar. 7 to June 5, 1908, also poorly defined, taking into account the readings of a taffrail log and the direction and force of the wind; June 6, 1908, to Apr. 2, 1910, well defined; Apr. 3 to Sept. 30, 1910, fairly well defined. There has been added the discharge of Keno Canal, as furnished by the United States Reclamation Service, as follows: Sept. 1 to Oct. 31, 1908, 50 second-feet; Nov. 1 to Dec. 31, 1908, 75 second-feet; Jan. 1, 1909, to Sept. 30, 1910, 130 second-feet. Discharge, May 15, 1904, to June 5, 1908; Nov. 8 to Dec. 5, Dec. 11-17, 1909; May 17 to July 21, 1910, determined from gage heights read on bridge gage and a rating curve applicable thereto. Discharge interpolated for days for which gage heights are missing. These discharges supersede those published in Water Supply Papers 251, 271, 291, and 300.

Monthly discharge of Link River at Klamath Falls, Oreg., for 1904-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
May 15-31.....	9,020	8,140	8,640	291,000	B.
June.....	8,140	5,240	6,740	401,000	B.
July.....	5,140	3,060	4,120	253,000	C.
August.....	2,980	1,860	2,340	144,000	C.
September.....	1,800	1,480	1,660	98,800	C.
The period.....	-----	-----	-----	1,190,000	-----
1904-5.					
October.....	1,740	1,580	1,690	104,000	C.
November.....	1,980	1,740	1,840	109,000	C.
December.....	2,560	1,860	2,180	134,000	C.
January.....	2,740	2,590	2,620	161,000	C.
February.....	3,230	2,740	3,100	172,000	C.
March.....	3,400	3,060	3,090	190,000	C.
April.....	3,230	2,820	3,110	185,000	C.
May.....	2,740	2,380	2,600	160,000	C.
June.....	2,380	1,640	2,000	119,000	C.
July.....	1,740	1,140	1,360	83,600	C.
August.....	1,140	985	1,050	64,600	C.
September.....	1,080	985	1,030	61,300	C.
The year.....	3,400	985	2,140	1,540,000	-----

Monthly discharge of Link River at Klamath Falls, Oreg., for 1904-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October	1,260	1,060	1,160	71,300	C.
November.....	1,690	1,150	1,330	79,100	C.
December.....	1,840	1,480	1,590	97,800	C.
January.....	2,240	1,690	1,950	120,000	C.
February.....	2,240	1,920	1,990	111,000	C.
March.....	2,740	2,040	2,320	143,000	C.
April.....	4,340	2,740	3,520	209,000	C.
May.....	4,440	3,770	4,080	251,000	C.
June.....	4,150	3,140	3,620	215,000	C.
July.....	3,060	1,860	2,490	153,000	C.
August.....	1,800	1,220	1,470	90,400	C.
September.....	1,260	1,150	1,190	70,800	C.
The year.....	4,440	1,060	2,230	1,610,000	
1906-7.					
October.....	1,300	1,150	1,200	73,800	C.
November.....	1,690	1,260	1,460	86,900	C.
December.....	1,920	1,540	1,740	107,000	C.
January.....	2,310	1,920	2,190	135,000	C.
February.....	4,240	2,310	3,530	196,000	C.
March.....	5,390	4,150	4,650	286,000	C.
April.....	5,790	5,350	5,630	335,000	C.
May.....	5,570	4,630	5,090	313,000	C.
June.....	7,710	3,260	4,020	239,000	C.
July.....	3,140	1,920	2,470	152,000	C.
August.....	1,860	1,440	1,570	96,500	C.
September.....	1,470	1,370	1,410	83,900	C.
The year.....	7,710	1,150	2,910	2,100,000	
1907-8.					
October.....	1,580	1,390	1,460	89,800	C.
November.....	1,710	1,560	1,630	97,000	C.
December.....	2,480	1,690	1,970	121,000	C.
January.....	2,820	2,450	2,660	164,000	C.
February.....	3,230	2,740	2,890	166,000	C.
March.....	3,180	2,380	2,730	168,000	B.
April.....	3,540	2,560	2,990	178,000	B.
May.....	2,970	2,230	2,620	161,000	B.
June.....	2,180	1,610	2,050	122,000	A.
July.....	1,790	1,100	1,440	88,500	A.
August.....	1,200	720	982	60,400	A.
September.....	1,170	710	889	52,900	A.
The year.....	3,540	710	2,030	1,470,000	
1908-9.					
October.....	2,300	550	1,360	83,600	A.
November.....	1,880	1,680	1,820	108,000	C.
December.....	2,330	1,730	2,000	123,000	A.
January.....	3,570	1,980	2,630	162,000	A.
February.....	4,280	2,460	3,600	200,000	A.
March.....	4,110	2,620	3,720	229,000	B.
April.....	3,770	3,230	3,520	209,000	C.
May.....	3,430	2,700	3,050	188,000	A.
June.....	2,970	850	2,450	146,000	C.
July.....	2,010	1,160	1,610	99,000	A.
August.....	1,360	905	1,110	68,200	A.
September.....	1,200	750	999	59,400	A.
The year.....	4,280	550	2,310	1,680,000	
1909-10.					
October.....	1,630	750	1,190	73,200	B.
November.....	2,440	1,180	1,640	97,600	C.
December.....	3,430	2,510	3,110	191,000	C.
January.....	3,130	2,590	2,830	174,000	B.
February.....	2,940	2,490	2,630	146,000	B.
March.....	4,990	3,040	4,290	264,000	B.
April.....	5,210	4,110	4,660	277,000	B.
May.....	4,150	2,590	3,270	201,000	C.
June.....	2,660	1,740	2,200	131,000	C.
July.....	1,800	1,270	1,450	89,200	C.
August.....	1,460	895	1,170	71,900	B.
September.....	1,490	950	1,150	68,400	B.
The year.....	5,210	750	2,470	1,780,000	

KLAMATH RIVER BELOW KLAMATH FALLS, OREG.

Location.—There were three gages installed: Gage No. 1, 4 miles below Klamath Falls; gage No. 2, at Lee's ranch, 12 miles below Klamath Falls; and gage No. 3, at Teeter's landing, 17 miles below Klamath Falls.

Records presented.—December 19, 1906, to June 28, 1909.

Gages.—Elevation of the zero of gage No. 1 was 4,079.86 feet above sea level; of gage No. 2, 4,075.04 feet; and of No. 3, 4,079.44 feet.

Daily gage height, in feet, of Klamath River 4 miles below Klamath Falls, Oreg., for 1906-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1				5.8		6.8	7.35	7.5	7.0	6.4	5.55	
2				5.8		6.8	7.4					5.2
3				5.8			7.4	7.4	7.0	6.4	5.5	
4				5.8		9.0						5.15
5						9.0	7.5	7.5		6.3	5.45	
6						9.0	7.5		7.0			5.15
7				5.8		9.0		7.5		6.25	5.4	
8				5.8		9.0	7.5		6.9	6.25		
9				5.8		9.9	7.5			6.2		5.15
10				5.8			7.5				5.35	
11						7.0		7.4	6.9	6.2		5.2
12					6.2		7.5				5.35	
13					6.3			7.35	6.85		5.35	
14				5.8	6.3		7.55	7.4				5.15
15				5.8	6.3			7.4	6.8	6.0		
16				5.8	6.3			7.35			5.3	5.1
17				5.8	6.2			7.3		5.95	5.25	
18				5.8	6.7		7.55	7.3		5.95		5.1
19				5.8	6.7				6.8		5.25	
20			5.5	5.8	6.7		7.55	7.25		5.9		5.1
21			5.5	5.8	6.7			7.2				5.1
22			5.8	5.8	6.8		7.6	7.2	6.65	5.8	5.15	
23			5.5	5.8	6.8					5.8		
24			5.5	5.8			7.5	7.2	6.6		5.25	5.1
25			5.5	5.8	9.0			7.15		5.75		
26			5.8	5.8	6.8		7.5		6.55	5.7		
27			5.8	5.8		7.2				5.7	5.2	5.0
28			5.8		6.8	7.3		7.1				
29			5.8			7.3	7.5	7.1	6.5	5.65		5.0
30			5.8			7.3		7.1		5.65	5.2	
31			5.8			7.35				5.6	5.2	
1907-8.												
1					6.2	6.15			5.85	5.3	4.75	
2				5.9			6.15	6.1				4.4
3	5.1	5.2	5.4		6.3	6.15			5.8	5.2	4.7	
4		5.2		5.9			6.15	6.0				
5	5.1				6.25	6.15					4.7	4.35
6			5.5	5.95			6.15		5.7			
7	5.1	5.25				6.15		6.0		5.2		4.4
8					6.4		6.15	6.0	5.75		4.65	
9	5.1	5.25	5.4	6.0		6.15				5.1		
10					6.15			5.95			4.65	4.3
11	5.1	5.3		5.95	6.2	6.15	6.15		5.7	5.1		
12	5.1		5.5					6.0				4.35
13				6.0					5.7	5.1	4.65	
14	5.1	5.25	5.55		6.2	6.1	6.1					4.35
15				6.0	6.2			6.0	5.7	5.0	4.65	
16		5.3	5.55			6.15					4.65	
17	5.1				6.2		6.2		5.6			4.4
18		5.25		6.05		6.1	6.1	5.95		5.0		
19	5.1				6.15						4.6	4.4
20		5.3	5.55	6.05	6.15			5.95	5.8	5.0		
21	5.1					6.1	6.2					
22					6.15				5.4		4.55	4.4
23		5.3	5.6	6.15		6.1	6.15	5.9		4.95		
24	5.15								5.55		4.55	4.4
25		5.35		6.1	6.15		6.1	5.85				
26	5.15		5.85			6.1					4.5	4.4
27		5.35		6.15	6.15		6.0		5.4	4.86		
28	5.2		5.8			6.1		5.9	5.35			
29										4.8	4.45	
30		5.35	5.95	6.15			6.15	5.85				
31	5.15					6.1					4.45	

Daily gage height, in feet, of Klamath River 4 miles below Klamath Falls, Oreg., for 1906-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1	4.4				6.2		6.5	6.4				
2				5.35		6.5			6.05			
3	4.4	5.1	5.25				6.5	6.35				
4				5.35		6.6						
5			5.3		6.15		6.45	6.3	5.95			
6		5.1		5.55		6.4						
7	4.5						6.45		5.85			
8					6.15			6.3				
9			5.3	5.55		6.45						
10	4.6	5.1			6.15		6.4		5.9			
11						6.5		6.2				
12	4.65		5.25	5.55		6.3	6.5	6.45	5.85			
13												
14		5.15										
15			5.3	5.7	6.2	6.55	6.5	6.2	5.8			
16	4.9											
17		5.2					6.4	6.2	5.85			
18			5.4		6.4	6.55						
19				5.95			6.35	6.15	5.8			
20	5.0			5.8	6.4							
21		5.2	5.4				6.4		5.7			
22					6.3	6.55		6.2				
23	5.0	5.25		5.85					5.75			
24			5.35		6.5		6.4	6.15				
25												
26	5.0	5.2	5.35	5.95		6.55	6.4		5.6			
27	5.05				6.45			6.15				
28		5.25		6.0					5.65			
29				6.0			6.3	6.1				
30			5.4			6.55						
31								6.05				

Daily gage height, in feet, of Klamath River 12 miles below Klamath Falls, Oreg., for 1906-1908.

Day.	Dec.	Jan.	Feb.	Mar.	Apr.	Day.	Dec.	Jan.	Feb.	Mar.	Apr.
1906-7.						1906-7.					
1		10.5	10.8	11.7	12.1	16		10.7	11.5	11.8	
2		10.6	10.9	11.7	12.1	17		10.7	11.5	11.9	
3		10.7	11.0	11.7	12.2	18		10.7	11.5	12.1	
4		10.8	11.0	11.7	12.2	19		10.4	10.7	11.5	12.1
5		10.7	11.1	11.7	12.2	20		10.4	10.7	11.5	12.0
6		10.7	11.1	11.7	12.2	21		10.4	10.7	11.5	12.1
7		10.7	11.2	11.7		22		10.5	10.7	11.6	12.0
8		10.7	11.2	11.8		23		10.4	10.7	11.6	12.1
9		10.7	11.2	11.8		24		10.4	10.7	11.7	12.1
10		10.7	11.3	11.8		25		10.6	10.7	11.7	12.1
11		10.7	11.4	11.9		26		10.5	10.7	11.7	12.1
12		10.7	11.4	11.8		27		10.5	10.7	11.7	12.1
13		10.7	11.4	11.8		28		10.5	10.8	11.7	12.1
14		10.7	11.4	11.8		29		10.5	10.8		12.1
15		10.7	11.4	11.8		30		10.6	10.8		12.1
						31		10.5	10.8		12.1

Daily gage height, in feet, of Klamath River 12 miles below Klamath Falls, Oreg., for 1906-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.	10.0	10.1	10.3	10.7	11.2	11.1	11.2				9.8	
2.	10.0	10.1	10.3	10.7	11.2	11.2	11.2					
3.	10.0	10.1	10.3	10.8	11.2	11.2	11.2					
4.	10.0	10.1	10.3	10.8	11.2	11.2	11.2			10.15		
5.	10.0	10.1	10.3	10.9	11.2	11.2	11.2					
6.	10.0	10.1	10.3	10.9	11.2	11.2	11.2		10.6			9.4
7.	10.0	10.1	10.3	10.9	11.2	11.2	11.2					
8.	10.0	10.1	10.3	10.9	11.2	11.2	11.2				9.7	
9.	10.0	10.2	10.3	10.9	11.2	11.2	11.2					
10.	10.0	10.2	10.3	11.0	11.2	11.2	11.2			10.0		
11.	10.0	10.2	10.3	11.0	11.2	11.2	11.2					
12.	10.0	10.2	10.3	11.0	11.2	11.2	11.2					
13.	10.0	10.2	10.3	11.0	11.2	11.2	11.2		10.55			9.5
14.	10.0	10.2	10.3	11.0	11.2	11.2	11.2					
15.	10.0	10.2	10.3	11.0	11.2	11.2	11.2				9.6	
16.	10.0	10.2	10.3	11.0	11.2	11.2	11.2					
17.	10.0	10.2	10.3	11.1	11.2	11.2						
18.	10.0	10.2	10.3	11.1	11.2	11.2				9.9		
19.	10.0	10.2	10.3	11.1	11.2	11.2						
20.	10.0	10.2	10.3	11.1	11.2	11.2			10.4			
21.	10.0	10.2	10.3	11.1	11.2	11.2						
22.	10.0	10.2	10.4	11.1	11.2	11.2					9.6	
23.	10.0	10.2	10.4	11.1	11.1	11.2						
24.	10.0	10.2	10.5	11.1	11.1	11.2		10.8				
25.	10.1	10.3	10.5	11.1	11.1	11.2				9.8		
26.	10.1	10.3	10.5	11.1	11.1	11.2						
27.	10.1	10.3	10.5	11.1	11.1	11.2			10.3			
28.	10.1	10.3	10.5	11.1	11.2	11.2						
29.	10.1	10.3	10.5	11.1	11.2	11.2						
30.	10.1	10.3	10.5	11.2	11.2	11.2		10.7			9.5	
31.	10.1		10.5	11.2		11.2						

Daily gage height, in feet, of Klamath River 17 miles below Klamath Falls, Oreg., for 1906-1908.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.				6.07	6.20	7.10	7.60	7.80	7.40	6.80	6.00	5.58
2.				6.10	6.25	7.10	7.60	7.80	7.40	6.75	5.90	5.58
3.				6.12	6.30	7.12	7.63	7.75	7.35	6.73	5.90	5.58
4.				6.27	6.45	7.12	7.80	7.75	7.33	6.70	5.90	5.58
5.				6.30	6.47	7.15	7.75	7.80	7.30	6.68	5.90	5.58
6.				6.15	6.50	7.17	7.65	7.75	7.32	6.65	5.83	5.58
7.				6.15	6.55	7.20	7.65	7.75		6.60	5.70	5.55
8.				6.12	6.60	7.20	7.70	7.75	7.25	6.60	5.75	5.55
9.				6.10	6.65	7.25	7.70	7.80	7.20	6.60	5.78	5.55
10.				6.15	6.70	7.25	7.70	7.90	7.20	6.56	5.80	5.55
11.				6.15	6.72	7.25	7.70	7.75	7.25	6.52	5.80	5.55
12.				6.15	6.77	7.22	7.75	7.65	7.22	6.50	5.75	5.50
13.				6.15	6.80	7.22	7.80	7.70			5.75	5.50
14.				6.15	6.80	7.22	7.80	7.70		6.45	5.75	5.50
15.				6.15	6.85	7.27	7.80	7.70		6.40	5.72	5.50
16.				6.17	6.90	7.25	7.80	7.65	7.22	6.37	5.70	5.65
17.				6.17	6.90	7.30	7.75	7.65	7.22	6.35		5.48
18.				6.17	6.90	7.50	7.80	7.60	7.22	6.32	5.68	5.48
19.			5.95	6.20	6.92	7.35	7.80	7.60	7.19	6.30	5.68	5.48
20.			5.96	6.20	6.95	7.45	7.90	7.60	7.19	6.30	5.65	5.50
21.			5.95	6.20	6.97	7.42	7.90	7.45		6.23	5.62	5.48
22.			6.03	6.20	7.00	7.47	7.80	7.50		6.20	5.60	5.48
23.			5.95	6.20	7.00	7.55	7.80	7.50	7.00	6.20	5.58	5.50
24.			5.95	6.20	7.05	7.50	7.80	7.50	7.00	6.17	5.70	5.48
25.			6.02	6.20	7.00	7.50	7.85	7.50	6.97	6.15	5.65	5.50
26.			6.10	6.20	7.05	7.50	7.85	7.50	6.95	6.10	5.65	5.45
27.			6.02	6.17	7.05	7.50	7.85	7.40	6.94	6.10	5.60	5.40
28.			6.02	6.15	7.10	7.50	7.80	7.40	6.94	6.10	5.63	5.40
29.			6.15	6.15		7.55	7.80	7.40	6.87	6.10	5.63	5.40
30.			6.10	6.15		7.60	7.80	7.40	6.80	6.10	5.63	5.50
31.			6.10	6.10		7.60		7.40		6.00	5.60	

Daily gage height, in feet, of Klamath River 17 miles below Klamath Falls, Oreg., for 1906-1908—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	5.48	-----	5.80	6.20	-----	6.51	6.50	-----	-----	5.75	-----	4.95
2.....	5.50	5.60	5.80	6.20	6.58	-----	6.50	-----	-----	5.74	-----	4.95
3.....	5.50	5.60	5.85	6.20	6.59	6.53	6.50	-----	-----	5.72	-----	4.92
4.....	5.50	5.60	5.85	6.20	6.60	6.52	6.50	6.41	-----	5.70	-----	4.96
5.....	5.50	5.60	5.85	6.22	-----	6.52	-----	6.41	6.14	5.70	-----	4.95
6.....	5.50	5.60	5.85	6.30	-----	6.52	-----	-----	6.12	5.69	-----	4.96
7.....	5.50	5.60	5.80	6.31	6.55	6.52	-----	-----	6.10	5.68	-----	4.90
8.....	5.50	5.65	5.80	-----	-----	6.52	6.50	-----	6.18	5.67	-----	4.88
9.....	5.53	5.67	5.80	-----	6.55	6.51	6.50	-----	6.10	5.64	-----	4.85
10.....	5.50	5.70	5.80	6.31	6.55	6.51	6.51	-----	6.10	5.62	-----	4.85
11.....	5.50	5.70	5.80	6.32	-----	6.51	6.51	-----	6.09	5.59	-----	4.87
12.....	5.50	5.70	5.90	6.32	-----	6.50	6.51	-----	6.08	-----	-----	4.88
13.....	5.50	-----	5.90	6.32	6.57	6.50	6.51	6.42	6.06	-----	-----	4.89
14.....	5.53	5.70	5.90	-----	6.58	6.50	6.51	6.42	6.02	-----	-----	4.85
15.....	5.53	5.70	5.90	6.37	6.58	6.49	6.51	-----	6.00	-----	5.15	4.85
16.....	5.53	5.70	5.90	6.37	6.52	6.49	6.51	6.41	-----	-----	5.10	4.86
17.....	5.53	-----	5.90	6.40	6.52	-----	6.51	-----	-----	-----	5.10	4.88
18.....	5.53	5.70	5.90	6.40	6.53	-----	6.51	6.41	-----	-----	5.10	4.89
19.....	5.53	5.72	6.00	6.46	-----	6.49	6.52	6.41	5.98	-----	5.10	4.89
20.....	5.53	5.72	5.90	6.46	6.53	6.49	6.52	-----	5.90	-----	5.05	4.90
21.....	5.53	5.72	5.90	6.47	6.55	6.50	6.53	-----	-----	-----	5.05	4.92
22.....	5.53	5.75	5.90	6.47	6.55	6.49	-----	6.40	5.90	-----	5.05	4.95
23.....	5.55	5.75	6.00	6.48	6.55	6.49	-----	-----	5.90	-----	5.05	4.96
24.....	5.55	5.75	6.00	6.50	6.53	-----	-----	-----	5.90	-----	5.00	4.95
25.....	5.55	5.75	6.00	6.50	6.53	-----	6.47	-----	5.90	-----	4.96	4.95
26.....	5.57	5.75	6.20	6.50	6.52	-----	6.45	-----	-----	-----	5.00	4.92
27.....	5.57	5.75	6.15	6.50	-----	-----	-----	6.40	5.80	-----	4.80	4.95
28.....	5.59	5.75	6.20	6.50	-----	6.47	-----	6.40	5.78	-----	4.85	4.95
29.....	5.60	5.75	6.22	-----	-----	-----	6.44	-----	5.76	-----	4.90	4.96
30.....	5.60	5.80	6.20	-----	-----	-----	-----	-----	5.76	-----	4.95	4.98
31.....	5.60	-----	6.20	-----	-----	6.50	-----	-----	-----	-----	4.95	-----

Day.	Oct.	Nov.	Day.	Oct.	Nov.	Day.	Oct.	Nov.
1908.			1908.			1908.		
1.....	4.98	-----	11.....	5.06	-----	21.....	5.48	-----
2.....	5.05	-----	12.....	5.10	-----	22.....	5.46	-----
3.....	5.08	-----	13.....	5.35	-----	23.....	5.48	-----
4.....	4.98	-----	14.....	5.36	-----	24.....	5.50	-----
5.....	5.00	-----	15.....	5.38	-----	25.....	5.50	-----
6.....	5.00	5.54	16.....	5.39	-----	26.....	5.50	-----
7.....	5.01	5.55	17.....	5.40	-----	27.....	5.50	-----
8.....	5.05	5.55	18.....	5.41	-----	28.....	5.50	-----
9.....	5.02	-----	19.....	5.45	-----	29.....	5.50	-----
10.....	5.05	-----	20.....	5.50	-----	30.....	5.50	-----
						31.....	5.50	-----

LOWER KLAMATH LAKE NEAR BROWNELL, CAL.

Location.—In sec. 35, T. 47 N., R. 2 E., 4 miles east of Brownell.

Records presented.—January 23, 1907, to July 15, 1909.

Gage.—Vertical staff. Datum of gage 4,082.50 feet above sea level.

Daily gage height, in feet, of Lower Klamath Lake near Brownell, Cal., for 1907-1909.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1.					3.0	3.9	4.3	4.7	4.3	3.8	2.8	2.4
2.					3.0	3.9	4.4	4.7	4.3	3.8	2.7	2.4
3.					3.1	3.9	4.4	4.8	4.3	3.7	2.7	2.4
4.					3.2	3.9	4.4	4.8	4.3	3.7	2.6	2.4
5.					3.2	3.9	4.4	4.7	4.3	3.6	2.6	2.4
6.					3.2	3.9	4.5	4.6	4.3	3.6	2.6	2.4
7.					3.3	4.0	4.5	4.7	4.2	3.5	2.6	2.4
8.					3.3	4.0	4.5	4.6	4.2	3.5	2.6	2.4
9.					3.3	4.0	4.4	4.5	4.2	3.5	2.6	2.4
10.					3.3	4.0	4.4	4.5	4.2	3.4	2.6	2.4
11.					3.3	4.0	4.4	4.6	4.2	3.4	2.6	2.3
12.					3.4	4.0	4.4	4.6	4.2	3.4	2.6	2.3
13.					3.4	4.0	4.4	4.5	4.2	3.4	2.6	2.3
14.					3.4	4.0	4.5	4.5	4.2	3.4	2.6	2.3
15.					3.4	4.1	4.6	4.4	4.1	3.4	2.6	2.3
16.					3.4	4.1	4.6	4.5	4.1	3.4	2.6	2.3
17.					3.5	4.1	4.6	4.5	4.1	3.4	2.6	2.3
18.					3.5	4.1	4.7	4.3	4.1	3.3	2.6	2.3
19.					3.6	4.1	4.7	4.4	4.1	3.3	2.5	2.3
20.					3.7	4.1	4.7	4.4	4.1	3.2	2.5	2.3
21.					3.7	4.1	4.7	4.3	4.1	3.2	2.5	2.3
22.					3.7	4.1	4.7	4.4	4.1	3.2	2.5	2.3
23.				2.9	3.8	4.1	4.7	4.4	4.1	3.2	2.5	2.3
24.				2.9	3.7	4.1	4.7	4.4	4.1	3.1	2.5	2.3
25.				2.9	3.8	4.1	4.7	4.4	4.0	3.1	2.5	2.3
26.				2.9	3.8	4.2	4.7	4.4	4.0	3.0	2.5	2.3
27.				2.9	3.8	4.3	4.7	4.4	3.9	3.0	2.5	2.3
28.				2.9	3.8	4.3	4.7	4.4	3.8	3.0	2.5	2.3
29.				2.9		4.3	4.7	4.4	3.8	3.0	2.5	2.3
30.				2.9		4.3	4.7	4.3	3.8	2.9	2.5	2.3
31.				3.0		4.3		4.3		2.9		
1907-8.												
1.	2.3	2.1	2.6	2.8	3.2	3.3	3.3	3.2	3.1		2.1	1.7
2.	2.3	2.1	2.6	2.8	3.2	3.3	3.3	3.2	3.1		2.1	1.7
3.	2.3	2.1	2.6	2.8	3.2	3.3	3.3	3.2	3.1	2.5	2.1	1.7
4.	2.3	2.2	2.6	2.8	3.3	3.3	3.3	3.2	3.1	2.5	2.1	1.7
5.	2.3	2.3	2.6	2.8	3.3	3.4	3.3	3.2	3.0	2.5	2.0	1.7
6.	2.3	2.3	2.6	2.8	3.3	3.4	3.3	3.2	3.0	2.5	2.0	1.7
7.	2.3	2.4	2.6	2.8	3.4	3.4	3.3	3.2	3.0	2.5	2.0	1.7
8.	2.3	2.4	2.6	2.8	3.4	3.4	3.3	3.2	3.0	2.5	1.9	1.7
9.	2.3	2.4	2.6	2.8	3.4	3.4	3.3	3.2	3.0	2.5	1.9	1.7
10.	2.3	2.4	2.6	2.8	3.4	3.4	3.3	3.2	3.0	2.4	1.9	1.6
11.	2.3	2.4	2.6	2.8	3.4	3.4	3.3	3.2	3.0	2.4	1.9	1.6
12.	2.3	2.4	2.6	2.9	3.4	3.4	3.3	3.1	2.9	2.4	1.9	1.6
13.	2.3	2.4	2.6	2.9	3.4	3.4	3.3	3.1	2.9	2.4	1.9	1.6
14.	2.3	2.5	2.6	3.0	3.4	3.4	3.3	3.1	2.9	2.4	1.9	1.6
15.	2.3	2.5	2.6	3.0	3.4	3.4	3.3	3.1	2.9	2.4	1.9	1.6
16.	2.3	2.5	2.6	3.0	3.4	3.4	3.2	3.1	2.9	2.3	1.9	1.6
17.	2.3	2.5	2.6	3.0	3.4	3.4	3.0	3.1	2.9	2.3	1.9	1.6
18.	2.3	2.5	2.6	3.1	3.4	3.4	3.1	3.1	2.9	2.3	1.9	1.6
19.	2.3	2.5	2.7	3.1	3.4	3.3	3.1	3.1	2.8	2.2	1.9	1.6
20.	2.3	2.5	2.7	3.1	3.4	3.3	3.1	3.1	2.8	2.2	1.9	1.6
21.	2.3	2.5	2.7	3.1	3.4	3.3	3.1	3.1	2.8	2.2	1.8	1.6
22.	2.3	2.5	2.7	3.1	3.4	3.3	3.0	3.1	2.8	2.2	1.8	1.6
23.	2.3	2.5	2.7	3.1	3.4	3.3	3.0	3.1		2.2	1.8	1.7
24.	2.3	2.5	2.7	3.1	3.4	3.3	3.1	3.1		2.2	1.8	1.7
25.	2.3	2.5	2.7	3.1	3.4	3.3	3.2	3.1		2.1	1.8	1.7
26.	2.3	2.5	2.7	3.1	3.4	3.3	3.2	3.1		2.1	1.8	1.7
27.	2.3	2.5	2.7	3.1	3.4	3.3	3.2	3.1		2.1	1.8	1.7
28.	2.2	2.5	2.7	3.1	3.3	3.3	3.2	3.1		2.1	1.8	1.7
29.	2.2	2.5	2.7	3.2	3.3	3.3	3.2	3.1		2.1	1.8	1.6
30.	2.2	2.6	2.7	3.2		3.3	3.2	3.1		2.1	1.7	1.6
31.	2.2		2.7	3.2		3.3		3.1		2.1	1.7	

Daily gage height, in feet, of Lower Klamath Lake near Brownell, Cal., for 1907-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	1.6	2.1	2.4	2.5	2.9	3.5	3.7	3.6	3.3	2.8	.....	.....
2.....	1.6	2.1	2.4	2.5	2.9	3.5	3.7	3.5	3.2	2.8	.....	.....
3.....	1.6	2.1	2.4	2.5	2.9	3.5	3.7	3.5	3.2	2.8	.....	.....
4.....	1.7	2.2	2.4	2.5	2.9	3.5	3.7	3.5	3.2	2.7	.....	.....
5.....	1.7	2.2	2.4	2.5	2.9	3.5	3.7	3.5	3.2	2.7	.....	.....
6.....	1.7	2.2	2.3	2.5	2.9	3.5	3.7	3.5	3.2	2.7	.....	.....
7.....	1.7	2.2	2.2	2.5	3.0	3.6	3.7	3.5	3.2	2.7	.....	.....
8.....	1.7	2.2	2.2	2.5	3.0	3.6	3.7	3.5	3.2	2.7	.....	.....
9.....	1.7	2.2	2.2	2.6	3.0	3.6	3.8	3.5	3.2	2.6	.....	.....
10.....	1.7	2.2	2.2	2.6	3.0	3.6	3.8	3.5	3.2	2.6	.....	.....
11.....	1.8	2.2	2.3	2.6	3.0	3.6	3.8	3.5	3.2	2.6	.....	.....
12.....	1.8	2.3	2.3	2.7	3.0	3.6	3.8	3.5	3.2	2.6	.....	.....
13.....	1.9	2.3	2.4	2.7	3.0	3.6	3.8	3.5	3.1	2.5	.....	.....
14.....	1.9	2.3	2.5	2.8	3.1	3.7	3.8	3.5	3.1	2.5	.....	.....
15.....	2.0	2.3	2.5	2.8	3.1	3.7	3.7	3.5	3.1	2.5	.....	.....
16.....	2.0	2.3	2.5	2.8	3.2	3.7	3.7	3.4	3.1	.....	.....	.....
17.....	2.0	2.3	2.5	2.8	3.3	3.7	3.6	3.4	3.1	.....	.....	.....
18.....	2.1	2.3	2.5	2.8	3.3	3.7	3.6	3.4	3.1	.....	.....	.....
19.....	2.1	2.2	2.5	2.8	3.3	3.7	3.7	3.4	3.0	.....	.....	.....
20.....	2.1	2.2	2.5	2.9	3.3	3.7	3.7	3.4	3.0	.....	.....	.....
21.....	2.1	2.2	2.5	2.9	3.4	3.7	3.7	3.4	3.0	.....	.....	.....
22.....	2.1	2.2	2.5	2.8	3.4	3.7	3.6	3.4	3.0	.....	.....	.....
23.....	2.1	2.2	2.5	2.8	3.5	3.7	3.6	3.4	3.0	.....	.....	.....
24.....	2.1	2.2	2.5	2.8	3.5	3.7	3.6	3.4	3.0	.....	.....	.....
25.....	2.1	2.3	2.5	2.8	3.5	3.7	3.6	3.4	2.9	.....	.....	.....
26.....	2.1	2.4	2.5	2.8	3.5	3.7	3.6	3.4	2.9	.....	.....	.....
27.....	2.1	2.4	2.5	2.8	3.5	3.7	3.6	3.4	2.9	.....	.....	.....
28.....	2.1	2.4	2.5	2.8	3.5	3.7	3.6	3.4	2.9	.....	.....	.....
29.....	2.1	2.4	2.5	2.8	.....	3.7	3.6	3.4	2.9	.....	.....	.....
30.....	2.1	2.4	2.5	2.9	.....	3.7	3.6	3.3	2.8	.....	.....	.....
31.....	2.1	.....	2.5	2.9	.....	3.7	.....	3.3	.....	.....	.....	.....

KLAMATH RIVER AT KENO, OREG.

Location.—In sec. 31, T. 39 S., R. 8 E., at county bridge at Keno.

Records presented.—May 31, 1904, to September 30, 1910.

Drainage area.—3,150 square miles (excluding Lower Klamath Lake drainage area).

Gage.—Vertical staff nailed to bridge; datum unchanged.

Channel.—Sand and clay; fairly permanent. Aquatic plants accumulate during low water. Immediately below station river breaks over a rocky ledge, falling about 200 feet to the mile.

Discharge measurements.—Made from cable about 1,000 feet below gage.

Winter flow.—River usually freezes over in winter, but as the water is deep and the ice never very thick the discharge relation is not seriously affected.

Accuracy.—During low water the accuracy of the record is somewhat affected by the growth of weeds. Low-water measurements are also somewhat uncertain on account of the extremely low velocities. Wind also has an effect at times. No measurements made since 1909; later estimates somewhat uncertain.

Cooperation.—Station maintained by the United States Reclamation Service since May, 1909.

Discharge measurements of Klamath River at Keno, Oreg., in 1904-1909.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
1904.				1907.			
May 31	Lewis and Landis.....	15.15	8,320	Apr. 2	L. F. Hendricks.....	14.10	4,550
June 5	do.....	15.05	8,230	16	do.....	14.25	4,880
18	T. H. Humphreys.....	14.65	7,200	May 23	J. C. Stevens.....	14.06	4,420
Aug. 12	do.....	13.00	2,570	June 1	C. E. Ellsworth.....	13.90	4,230
Sept. 17	do.....	12.40	1,790	15	do.....	13.65	3,650
28	C. T. Darley.....	12.40	1,720	29	do.....	13.45	3,160
Oct. 19	do.....	12.50	1,900	July 22	do.....	12.90	2,240
Nov. 3	do.....	12.60	1,940	29	do.....	12.75	1,970
26	do.....	12.65	2,160	Aug. 19	do.....	12.40	1,540
				Sept. 2	do.....	12.30	1,450
1905.				21	do.....	12.20	1,240
Jan. 10	C. T. Darley.....	13.00	2,590	Oct. 3	do.....	12.25	1,350
23	do.....	13.30	2,930	25	do.....	12.30	1,430
30	do.....	13.20	2,880	Nov. 4	do.....	12.37	1,470
Feb. 9	do.....	13.25	2,980	14	do.....	12.40	1,520
18	do.....	13.30	3,190				
Mar. 3	do.....	13.30	3,140	1908.			
31	do.....	13.32	3,160	Feb. 18	C. E. Ellsworth.....	13.20	2,690
Apr. 13	do.....	13.28	3,020	Mar. 6	do.....	13.17	2,580
May 17	do.....	13.03	2,680	Apr. 1	do.....	13.15	2,520
June 19	do.....	12.68	2,100	17	do.....	13.19	2,560
July 14	do.....	12.20	1,440	May 5	Ellsworth and Kimble..	13.02	2,400
Aug. 14	do.....	11.80	1,150	22	H. Kimble.....	12.90	2,570
31	do.....	11.75	924	June 12	do.....	12.80	2,260
Nov. 3	do.....	12.00	680	July 14	do.....	12.25	1,450
Dec. 3	do.....	12.28	851	Sept. 1	do.....	11.70	704
				17	do.....	11.60	789
1906.				Oct. 1	do.....	11.55	1,130
May 8	L. F. Hendricks.....	13.7	3,600	27	do.....	12.20	1,250
June 30	do.....	13.4	3,330	Nov. 29	Kimble and McGlashan	12.38	1,460
July 23	do.....	12.9	2,540				
Sept. 5	do.....	12.05	1,170	1909.			
				Apr. 30	Howard Kimble.....	13.38	2,880
1907.				June 2	A. E. Geiger.....	13.09	2,810
Feb. 19	L. F. Hendricks.....	13.55	3,240	29	do.....	12.76	1,930
Mar. 13	do.....	13.80	3,760	Sept. 14	John Yadon.....	11.87	877

Daily gage height, in feet, of Klamath River at Keno, Oreg., for 1904-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1904.						1904.					
1		15.1	14.2	13.3	12.7	16		14.8	13.8	13.0	12.4
2		15.1	14.1	13.3	12.6	17		14.7	13.8	12.9	12.4
3		15.1	14.1	13.3	12.6	18		14.7	13.8	12.9	12.4
4		15.05	14.1	13.2	12.6	19		14.6	13.7	12.9	12.4
5		15.0	14.05	13.2	12.6	20		14.6	13.7	12.9	12.4
6		15.0	14.0	13.2	12.6	21		14.6	13.7	12.9	12.4
7		15.0	14.0	13.1	12.5	22		14.6	13.6	12.8	12.4
8		14.9	14.0	13.1	12.5	23		14.5	13.6	12.8	12.4
9		14.9	14.0	13.1	12.5	24		14.5	13.6	12.8	12.4
10		14.9	13.9	13.0	12.5	25		14.4	13.5	12.8	12.4
11		14.9	13.9	13.0	12.5	26		14.4	13.5	12.8	12.4
12		14.9	13.9	13.0	12.4	27		14.4	13.5	12.7	12.4
13		14.8	13.8	13.0	12.4	28		14.3	13.4	12.7	12.4
14		14.8	13.8	13.0	12.4	29		14.3	13.4	12.7	12.4
15		14.8	13.8	13.0	12.4	30		14.2	13.4	12.7	12.4
						31	15.1		13.4	12.7	

Daily gage height, in feet, of Klamath River at Keno, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	12.4	12.6	12.7	12.9	13.2	13.3	13.4	13.2	13.0	12.5	11.9	11.8
2.....	12.4	12.6	12.7	12.9	13.2	13.3	13.4	13.2	13.0	12.4	11.9	11.8
3.....	12.4	12.6	12.7	13.0	13.3	13.3	13.4	13.2	13.0	12.4	11.9	11.8
4.....	12.4	12.6	12.7	13.0	13.3	13.3	13.4	13.2	13.0	12.4	11.9	11.8
5.....	12.4	12.6	12.7	13.0	13.3	13.3	13.4	13.2	13.0	12.4	11.9	11.8
6.....	12.4	12.6	12.7	13.0	13.3	13.3	13.4	13.2	12.9	12.3	11.8	11.8
7.....	12.4	12.6	12.7	13.0	13.3	13.3	13.4	13.2	12.9	12.3	11.8	11.8
8.....	12.4	12.6	12.7	13.1	13.3	13.3	13.4	13.1	12.9	12.2	11.8	11.8
9.....	12.5	12.6	12.7	13.1	13.3	13.3	13.4	13.1	12.9	12.2	11.8	11.8
10.....	12.5	12.6	12.8	13.1	13.3	13.3	13.4	13.1	12.9	12.2	11.8	11.8
11.....	12.5	12.6	12.8	13.1	13.3	13.3	13.4	13.1	12.9	12.2	11.8	11.8
12.....	12.4	12.6	12.8	13.1	13.3	13.3	13.3	13.1	12.8	12.2	11.8	11.8
13.....	12.4	12.6	12.8	13.1	13.3	13.2	13.3	13.1	12.8	12.2	11.8	11.8
14.....	12.4	12.6	12.8	13.1	13.3	13.2	13.3	13.1	12.8	12.2	11.8	11.8
15.....	12.4	12.6	12.8	13.1	13.3	13.2	13.3	13.1	12.7	12.2	11.8	11.8
16.....	12.4	12.6	12.8	13.1	13.3	13.2	13.3	13.1	12.7	12.2	11.8	11.8
17.....	12.5	12.6	12.8	13.1	13.3	13.2	13.3	13.0	12.7	12.2	11.8	11.8
18.....	12.5	12.6	12.8	13.1	13.3	13.2	13.3	13.0	12.7	12.2	11.8	11.8
19.....	12.5	12.6	12.8	13.1	13.3	13.2	13.2	13.0	12.6	12.1	11.8	11.8
20.....	12.5	12.6	12.8	13.1	13.3	13.2	13.2	13.0	12.6	12.1	11.8	11.8
21.....	12.5	12.7	12.8	13.1	13.3	13.2	13.2	13.0	12.6	12.1	11.8	11.8
22.....	12.5	12.7	12.8	13.1	13.3	13.2	13.2	13.0	12.5	12.1	11.8	11.8
23.....	12.5	12.7	12.8	13.3	13.3	13.2	13.2	13.0	12.5	12.1	11.8	11.8
24.....	12.5	12.7	12.8	13.1	13.3	13.2	13.2	13.0	12.5	12.1	11.8	11.8
25.....	12.5	12.7	12.8	13.1	13.3	13.3	13.2	13.0	12.5	12.0	11.8	11.8
26.....	12.5	12.7	12.9	13.1	13.3	13.3	13.2	13.0	12.5	12.0	11.8	11.8
27.....	12.5	12.7	12.9	13.1	13.3	13.3	13.2	13.0	12.5	12.0	11.8	11.8
28.....	12.5	12.7	12.9	13.2	13.3	13.4	13.2	13.0	12.5	12.0	11.8	11.8
29.....	12.5	12.7	12.9	13.2	-----	13.4	13.2	13.0	12.5	12.0	11.8	11.9
30.....	12.5	12.7	12.9	13.2	-----	13.4	13.2	13.0	12.5	12.0	11.8	11.9
31.....	12.5	-----	12.9	13.2	-----	13.4	-----	13.0	-----	11.9	11.8	-----
1905-6.												
1.....	11.9	12.1	12.3	12.5	12.8	12.8	13.1	13.6	13.7	13.4	12.6	12.1
2.....	11.9	12.1	12.3	12.5	12.8	12.9	13.1	13.6	13.7	13.4	12.6	12.1
3.....	11.9	12.1	12.3	12.5	12.8	12.9	13.1	13.6	13.7	13.4	12.6	12.1
4.....	11.9	12.1	12.3	12.5	12.8	12.8	13.1	13.7	13.7	13.3	12.6	12.1
5.....	11.9	12.1	12.3	12.5	12.8	12.8	13.1	13.7	13.7	13.3	12.6	12.1
6.....	11.9	12.1	12.3	12.5	12.8	12.8	13.2	13.7	13.7	13.3	12.6	12.1
7.....	11.9	12.1	12.3	12.5	12.8	12.8	13.2	13.7	13.7	13.3	12.5	12.1
8.....	11.9	12.1	12.4	12.5	12.7	12.8	13.2	13.7	13.7	13.3	12.5	12.1
9.....	11.9	12.1	12.4	12.5	12.7	12.8	13.2	13.7	13.7	13.3	12.5	12.1
10.....	11.9	12.1	12.4	12.5	12.7	12.8	13.2	13.7	13.7	13.2	12.5	12.1
11.....	11.9	12.1	12.4	12.4	12.7	12.8	13.3	13.7	13.7	13.2	12.5	12.1
12.....	11.9	12.1	12.4	12.5	12.7	12.8	13.3	13.7	13.6	13.2	12.5	12.0
13.....	11.9	12.1	12.4	12.6	12.7	12.8	13.3	13.7	13.6	13.2	12.5	12.0
14.....	11.9	12.1	12.4	12.7	12.7	12.8	13.3	13.7	13.6	13.2	12.4	12.0
15.....	11.9	12.1	12.4	12.6	12.7	12.9	13.3	13.7	13.6	13.2	12.4	12.0
16.....	11.9	12.2	12.4	12.7	12.7	12.9	13.4	13.7	13.6	13.2	12.4	12.0
17.....	12.0	12.2	12.4	12.7	12.7	12.9	13.4	13.7	13.6	13.1	12.3	12.0
18.....	12.0	12.2	12.4	12.7	12.7	12.9	13.4	13.7	13.6	13.1	12.3	12.0
19.....	12.0	12.2	12.4	12.8	12.7	12.9	13.5	13.7	13.6	13.1	12.3	12.0
20.....	12.0	12.2	12.4	12.8	12.7	12.9	13.5	13.7	13.5	13.1	12.3	12.0
21.....	12.0	12.3	12.4	12.8	12.7	12.9	13.5	13.7	13.5	13.1	12.3	12.0
22.....	12.0	12.3	12.4	12.8	12.8	12.9	13.5	13.7	13.5	13.0	12.2	12.0
23.....	12.0	12.3	12.4	12.8	12.8	12.9	13.5	13.7	13.5	12.9	12.2	12.0
24.....	12.0	12.3	12.4	12.8	12.8	12.9	13.5	13.7	13.5	12.9	12.2	12.0
25.....	12.0	12.3	12.4	12.8	12.8	13.0	13.5	13.7	13.5	12.8	12.2	12.0
26.....	12.0	12.3	12.4	12.8	12.8	13.0	13.5	13.7	13.5	12.8	12.2	12.0
27.....	12.0	12.3	12.5	12.8	12.8	13.0	13.6	13.7	13.5	12.8	12.2	12.0
28.....	12.1	12.3	12.5	12.8	-----	13.0	13.6	13.7	13.4	12.8	12.2	12.0
29.....	12.1	12.3	12.5	12.8	-----	13.0	13.6	13.7	13.4	12.7	12.2	12.0
30.....	12.1	12.3	12.5	12.8	-----	13.0	13.6	13.7	13.4	12.7	12.2	12.0
31.....	12.1	-----	12.5	12.8	-----	13.0	-----	13.7	-----	12.7	12.1	-----

Daily gage height, in feet, of Klamath River at Keno, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	12.0	12.2	12.4	12.70	12.90	13.70	14.10	14.30	13.92	13.40	12.65	12.35
2.....	12.0	12.2	12.4	12.70	13.00	13.70	14.10	14.30	13.90	13.37	12.60	12.30
3.....	12.0	12.2	12.5	12.70	13.10	13.70	14.10	14.30	13.88	13.35	12.55	12.30
4.....	12.0	12.2	12.5	12.70	13.10	13.70	14.30	14.30	13.86	13.32	12.54	12.30
5.....	12.0	12.2	12.5	12.70	13.20	13.80	14.20	14.30	13.84	13.30	12.52	12.27
6.....	12.0	12.2	12.5	12.70	13.20	13.80	14.20	14.30	13.81	13.25	12.50	12.25
7.....	12.0	12.2	12.5	12.70	13.30	13.80	14.20	14.30	13.80	13.23	12.49	12.25
8.....	12.0	12.2	12.5	12.70	13.30	13.80	14.20	14.30	13.79	13.21	12.48	12.25
9.....	12.0	12.2	12.5	12.80	13.40	13.80	14.30	14.30	13.77	13.20	12.47	12.25
10.....	12.0	12.2	12.5	12.80	13.40	13.80	14.30	14.20	13.75	13.18	12.47	12.25
11.....	12.0	12.2	12.5	12.80	13.40	13.80	14.30	14.20	13.73	13.16	12.45	12.25
12.....	12.0	12.3	12.5	12.80	13.40	13.80	14.30	14.10	13.73	13.15	12.45	12.24
13.....	12.0	12.3	12.5	12.80	13.40	13.80	14.30	14.20	13.73	13.13	12.43	12.24
14.....	12.0	12.3	12.5	12.80	13.50	13.80	14.30	14.20	13.71	13.10	12.42	12.23
15.....	12.0	12.3	12.5	12.80	13.50	13.80	14.20	14.20	13.69	13.05	12.41	12.23
16.....	12.0	12.3	12.5	12.80	13.50	13.80	14.30	14.20	13.66	13.02	12.40	12.23
17.....	12.0	12.3	12.6	12.80	13.50	13.90	14.30	14.20	13.64	13.00	12.40	12.23
18.....	12.0	12.3	12.6	12.80	13.50	14.10	14.30	14.20	13.62	12.98	12.39	12.23
19.....	12.0	12.4	12.6	12.80	13.50	14.00	14.40	14.10	13.60	12.95	12.39	12.22
20.....	12.1	12.4	12.6	12.80	13.60	14.00	14.40	14.10	13.58	12.92	12.37	12.22
21.....	12.1	12.4	12.6	12.80	13.60	14.00	14.30	14.10	13.56	12.91	12.35	12.20
22.....	12.1	12.4	12.7	12.80	13.60	14.00	14.30	14.10	13.55	12.90	12.33	12.20
23.....	12.1	12.4	12.6	12.80	13.60	14.00	14.30	14.00	13.54	12.87	12.30	12.20
24.....	12.1	12.4	12.6	12.80	13.60	14.00	14.30	14.00	13.53	12.85	12.30	12.20
25.....	12.1	12.4	12.6	12.80	13.70	14.00	14.30	13.98	13.53	12.82	12.31	12.17
26.....	12.1	12.4	12.6	12.80	13.70	14.00	14.30	13.96	13.51	12.80	12.31	12.15
27.....	12.1	12.4	12.6	12.80	13.70	14.00	14.30	13.95	13.50	12.78	12.31	12.15
28.....	12.1	12.4	12.6	12.90	13.70	14.00	14.30	13.94	13.47	12.76	12.31	12.15
29.....	12.1	12.4	12.6	12.90	.....	14.10	14.30	13.93	13.45	12.75	12.32	12.17
30.....	12.1	12.4	12.7	12.90	.....	14.10	14.30	13.93	13.42	12.72	12.32	12.20
31.....	12.2	.....	12.7	12.90	.....	14.10	.....	13.93	.....	12.70	12.34	.....
1907-8.												
1.....	12.22	12.40	12.50	12.90	13.10	13.20	13.15	13.00	12.80	12.50	11.97	11.66
2.....	12.25	12.33	12.50	12.92	13.10	13.17	13.15	13.00	12.75	12.50	11.95	11.66
3.....	12.21	12.44	12.50	12.95	13.10	13.19	13.13	13.00	12.75	12.45	12.00	11.64
4.....	12.20	12.37	12.50	12.95	13.15	13.19	13.15	13.00	12.80	12.42	12.00	11.65
5.....	12.20	12.38	12.50	12.97	13.17	13.19	13.15	13.00	12.80	12.40	12.00	11.65
6.....	12.20	12.39	12.52	12.99	13.27	13.19	13.16	13.00	12.80	12.39	12.00	11.63
7.....	12.22	12.39	12.38	13.00	13.22	13.19	13.17	13.00	12.80	12.40	12.00	11.61
8.....	12.23	12.39	12.50	13.00	13.30	13.19	13.19	13.00	12.80	12.36	12.00	11.55
9.....	12.23	12.39	12.50	13.00	13.27	13.19	13.19	12.99	12.79	12.32	11.95	11.58
10.....	12.25	12.40	12.50	13.00	13.20	13.19	13.19	12.99	12.79	12.30	11.90	11.60
11.....	12.25	12.40	12.50	13.00	13.20	13.19	13.19	12.99	12.80	12.30	11.85	11.60
12.....	12.25	12.40	12.60	13.00	13.19	13.19	13.19	12.99	12.79	12.25	11.89	11.60
13.....	12.25	12.40	12.60	13.00	13.20	13.19	13.19	12.99	12.79	12.20	11.80	11.60
14.....	12.25	12.40	12.60	13.00	13.20	13.17	13.19	12.98	12.75	12.20	11.82	11.58
15.....	12.25	12.40	12.60	13.02	13.20	13.17	13.19	12.97	12.70	12.15	11.82	11.59
16.....	12.25	12.40	12.60	13.04	13.20	13.15	13.19	13.00	12.65	12.15	11.82	11.60
17.....	12.25	12.40	12.63	13.08	13.20	13.00	13.20	13.01	12.63	12.15	11.82	11.60
18.....	12.25	12.40	12.63	13.09	13.20	13.17	13.15	12.95	12.61	12.15	11.80	11.64
19.....	12.30	12.40	12.64	13.09	13.19	13.17	13.17	12.96	12.59	12.15	11.80	11.60
20.....	12.30	12.42	12.65	13.10	13.20	13.15	13.20	12.99	12.60	12.13	11.79	11.62
21.....	12.30	12.43	12.65	13.10	13.20	13.15	13.20	12.95	12.59	12.11	11.75	11.65
22.....	12.30	12.46	12.66	13.13	13.20	13.15	13.10	12.96	12.59	12.10	11.71	11.65
23.....	12.30	12.48	12.69	13.15	13.20	13.10	13.19	12.97	12.59	12.09	11.71	11.66
24.....	12.30	12.48	12.73	13.17	13.20	13.90	13.10	12.95	12.59	12.06	11.71	11.67
25.....	12.30	12.49	12.78	13.17	13.17	13.50	13.10	12.95	12.57	12.00	11.71	11.68
26.....	12.30	12.49	12.90	13.16	13.15	13.50	13.10	12.85	12.45	12.02	11.71	11.69
27.....	12.30	12.49	12.90	13.15	13.15	13.70	13.10	12.90	12.50	12.04	11.60	11.70
28.....	12.36	12.49	12.89	13.15	13.17	13.10	13.10	12.90	12.50	12.05	11.62	11.70
29.....	12.37	12.50	12.90	13.15	.....	13.10	13.09	12.90	12.50	12.04	11.64	11.69
30.....	12.30	12.50	12.90	13.15	.....	13.00	13.09	12.80	12.45	12.20	11.66	11.68
31.....	12.30	.....	12.90	13.15	.....	13.10	.....	12.80	.....	12.00	11.68	.....

Daily gage height, in feet, of Klamath River at Keno, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.	11.55	12.22	12.41	12.50	13.14	13.50	13.50	13.39	13.12	12.65	12.14	11.84
2.	11.50	12.23	12.41	12.49	13.15	13.50	13.50	13.39	13.11	12.64	12.12	11.87
3.	11.63	12.25	12.41	12.48	13.10	13.50	13.50	13.38	13.50	12.60	12.12	11.88
4.	11.65	12.30	12.45	12.50	13.15	13.50	13.50	13.38	13.60	12.60	12.10	11.87
5.	11.70	12.28	12.46	12.59	13.18	13.50	13.50	13.34	13.50	12.59	.....	11.88
6.	11.75	12.28	12.47	12.59	13.18	13.50	13.50	13.35	13.50	12.58	.....	11.89
7.	11.75	12.29	12.47	12.62	13.19	13.50	13.50	13.32	13.10	12.58	.....	11.89
8.	11.75	12.30	12.46	12.68	13.20	13.50	13.50	13.31	13.10	12.57	.....	11.87
9.	11.70	12.30	12.45	12.68	13.20	13.50	13.50	13.32	13.20	12.49	.....	11.87
10.	11.80	12.30	12.45	12.68	13.20	13.50	13.45	13.18	13.10	12.46	.....	11.89
11.	11.80	12.30	12.44	12.68	13.20	13.50	13.45	13.21	13.10	12.44	11.99	11.87
12.	11.82	12.30	12.43	12.68	13.28	13.50	13.45	13.26	13.20	12.44	11.97	11.86
13.	11.80	12.30	12.43	12.69	13.28	13.50	13.45	13.21	13.10	12.42	11.95	11.85
14.	12.20	12.31	12.44	12.70	13.28	13.50	13.45	13.23	12.97	12.40	11.94	11.86
15.	12.10	12.31	12.45	12.72	13.28	13.50	13.45	13.21	12.95	12.38	11.93	11.87
16.	12.05	12.35	12.46	12.80	13.28	13.50	13.45	13.22	12.95	12.37	11.92	11.87
17.	12.10	12.36	12.47	12.81	13.30	13.50	13.45	13.20	12.95	12.36	11.91	11.82
18.	12.15	12.40	12.48	12.80	13.38	13.50	13.40	13.21	12.95	12.36	11.91	11.83
19.	12.00	12.40	12.49	12.85	13.40	13.50	13.40	13.22	12.90	12.35	11.89	11.82
20.	12.10	12.30	12.49	12.92	13.40	13.50	13.40	13.18	12.90	12.32	11.82	11.75
21.	12.15	12.39	12.49	12.92	13.40	13.50	13.40	13.20	12.91	12.30	11.88	11.85
22.	12.15	12.35	12.49	12.91	13.40	13.50	13.40	13.20	12.86	12.28	11.78	11.86
23.	12.20	12.33	12.49	12.95	13.40	13.50	13.40	13.22	12.85	12.26	11.85	11.85
24.	12.20	12.32	12.49	13.10	13.40	13.50	13.40	13.18	12.86	12.24	11.87	11.90
25.	12.20	12.33	12.49	13.00	13.40	13.50	13.40	13.20	12.84	12.20	11.86	11.88
26.	12.20	12.35	12.49	13.03	13.40	13.50	13.40	13.21	12.81	12.18	11.86	11.87
27.	12.25	12.40	12.49	13.05	13.40	13.50	13.40	13.10	12.81	12.15	11.87	11.87
28.	12.30	12.40	12.50	13.07	13.50	13.50	13.40	13.18	12.80	12.16	11.85	11.88
29.	12.25	12.40	12.50	13.08	.....	13.50	13.40	13.15	12.80	12.17	11.88	11.87
30.	12.20	12.41	12.50	13.11	.....	13.50	13.38	13.12	12.78	12.20	11.83	11.84
31.	12.20	.....	12.50	13.12	.....	13.50	.....	13.18	.....	12.15	11.80	.....
1909-10.												
1.	11.93	12.08	12.85	13.2	13.25	13.5	13.9	13.8	13.05	12.4	11.95	11.75
2.	11.84	12.07	12.85	13.2	13.25	13.5	13.9	13.8	13.1	12.35	11.95	11.7
3.	11.86	12.10	12.85	13.2	13.25	13.5	13.9	13.8	13.1	12.4	11.85	11.6
4.	11.86	12.16	12.85	13.2	13.25	13.55	13.9	13.8	13.1	12.4	11.95	11.75
5.	11.87	12.15	12.90	13.25	13.3	13.55	13.9	13.8	13.0	12.4	11.9	11.75
6.	11.89	12.17	12.90	13.25	13.3	13.55	13.95	13.75	13.0	12.4	11.9	11.7
7.	11.90	12.14	12.90	13.25	13.3	13.6	13.95	13.75	13.0	12.4	11.9	11.75
8.	11.91	12.16	12.90	13.3	13.3	13.6	13.95	13.75	13.0	12.35	11.9	11.7
9.	11.98	12.15	12.90	13.3	13.3	13.65	13.95	13.7	12.95	12.35	11.85	11.65
10.	11.96	12.18	12.90	13.3	13.3	13.65	13.9	13.7	12.95	12.35	11.85	11.65
11.	11.98	12.20	12.90	13.3	13.3	13.65	13.95	13.65	12.9	12.35	11.85	11.75
12.	11.95	12.25	12.95	13.3	13.3	13.65	13.9	13.6	12.9	12.3	11.8	11.75
13.	11.95	12.28	12.97	13.3	13.3	13.65	13.95	13.55	12.9	12.3	11.8	11.7
14.	11.97	12.30	12.70	13.2	13.3	13.7	13.9	13.55	12.85	12.25	11.8	11.7
15.	11.96	12.30	12.95	13.2	13.3	13.7	13.95	13.5	12.85	12.25	11.8	11.75
16.	11.98	12.38	12.98	13.2	13.3	13.7	13.95	13.45	12.8	12.25	11.8	11.65
17.	12.00	12.36	12.98	13.2	13.3	13.75	13.95	13.4	12.75	12.15	11.85	11.65
18.	12.05	12.39	13.00	13.2	13.3	13.8	13.95	13.4	12.75	12.15	11.85	11.75
19.	11.90	12.45	13.10	13.2	13.3	13.8	13.95	13.35	12.75	12.15	11.8	11.85
20.	12.00	12.48	13.00	13.2	13.3	13.8	13.95	13.35	12.65	12.15	11.7	11.8
21.	12.01	12.55	13.10	13.2	13.3	13.8	13.95	13.35	12.65	12.05	11.75	11.8
22.	12.02	12.55	13.10	13.2	13.35	13.85	13.95	13.35	12.6	12.15	11.75	11.85
23.	12.00	12.55	13.10	13.2	13.35	13.85	13.95	13.35	12.6	12.1	11.75	11.85
24.	12.01	12.60	13.10	13.2	13.35	13.9	13.9	13.3	12.6	12.1	11.75	11.85
25.	12.02	12.68	13.50	13.2	13.4	13.9	13.9	13.25	12.6	12.1	11.75	11.85
26.	12.00	12.70	13.50	13.2	13.4	13.9	13.85	13.2	12.55	12.05	11.7	11.85
27.	12.01	12.75	13.50	13.2	13.4	13.9	13.85	13.15	12.4	12.05	11.75	11.85
28.	12.03	12.75	13.20	13.2	13.4	13.9	13.8	13.15	12.5	12.05	11.65	11.85
29.	12.05	12.80	13.20	13.2	.....	13.9	13.8	13.1	12.5	12.0	11.7	11.85
30.	12.00	12.80	13.20	13.2	.....	.....	13.8	13.15	12.45	12.0	11.75	11.85
31.	12.00	.....	13.20	13.25	.....	.....	.....	13.15	.....	12.0	11.65	.....

Daily discharge, in second-feet, of Klamath River at Keno, Oreg., for 1904-1910.

Day.	June.	July.	Aug.	Sept.	Day.	June.	July.	Aug.	Sept.
1904.					1904.				
1	8,440	5,300	3,100	2,100	16	7,300	4,200	2,560	1,700
2	8,440	5,010	3,100	1,960	17	6,940	4,200	2,400	1,700
3	8,440	5,010	3,100	1,960	18	6,940	4,200	2,400	1,700
4	8,240	5,010	2,910	1,960	19	6,590	3,960	2,400	1,700
5	8,050	4,870	2,910	1,960	20	6,590	3,960	2,400	1,700
6	8,050	4,730	2,910	1,960	21	6,590	3,960	2,400	1,700
7	8,050	4,730	2,730	1,830	22	6,590	3,730	2,250	1,700
8	7,670	4,730	2,730	1,830	23	6,250	3,730	2,250	1,700
9	7,670	4,730	2,730	1,830	24	6,250	3,730	2,250	1,700
10	7,670	4,460	2,560	1,830	25	5,920	3,510	2,250	1,700
11	7,670	4,460	2,560	1,830	26	5,920	3,510	2,250	1,700
12	7,670	4,460	2,560	1,700	27	5,920	3,510	2,100	1,700
13	7,300	4,200	2,560	1,700	28	5,600	3,300	2,100	1,700
14	7,300	4,200	2,560	1,700	29	5,600	3,300	2,100	1,700
15	7,300	4,200	2,560	1,700	30	5,300	3,300	2,100	1,700
					31	.....	3,300	2,100	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1	1,700	1,960	2,100	2,400	2,910	3,100	3,300	2,910	2,560	1,830	1,140	1,050
2	1,700	1,960	2,100	2,400	2,910	3,100	3,300	2,910	2,560	1,700	1,140	1,050
3	1,700	1,960	2,100	2,560	3,100	3,100	3,300	2,910	2,560	1,700	1,140	1,050
4	1,700	1,960	2,100	2,560	3,100	3,100	3,300	2,910	2,560	1,700	1,140	1,050
5	1,700	1,960	2,100	2,560	3,100	3,100	3,300	2,910	2,560	1,700	1,140	1,050
6	1,700	1,960	2,100	2,560	3,100	3,100	3,300	2,910	2,400	1,580	1,050	1,050
7	1,700	1,960	2,100	2,560	3,100	3,100	3,300	2,910	2,400	1,580	1,050	1,050
8	1,700	1,960	2,100	2,730	3,100	3,100	3,300	2,730	2,400	1,460	1,050	1,050
9	1,830	1,960	2,100	2,730	3,100	3,100	3,300	2,730	2,400	1,460	1,050	1,050
10	1,830	1,960	2,250	2,730	3,100	3,100	3,300	2,730	2,400	1,460	1,050	1,050
11	1,830	1,960	2,250	2,730	3,100	3,100	3,300	2,730	2,400	1,460	1,050	1,050
12	1,700	1,960	2,250	2,730	3,100	3,100	3,100	2,730	2,250	1,460	1,050	1,050
13	1,700	1,960	2,250	2,730	3,100	2,910	3,100	2,730	2,250	1,460	1,050	1,050
14	1,700	1,960	2,250	2,730	3,100	2,910	3,100	2,730	2,250	1,460	1,050	1,050
15	1,700	1,960	2,250	2,730	3,100	2,910	3,100	2,730	2,100	1,460	1,050	1,050
16	1,700	1,960	2,250	2,730	3,100	2,910	3,100	2,730	2,100	1,460	1,050	1,050
17	1,830	1,960	2,250	2,730	3,100	2,910	3,100	2,560	2,100	1,460	1,050	1,050
18	1,830	1,960	2,250	2,730	3,100	2,910	3,100	2,560	2,100	1,460	1,050	1,050
19	1,830	1,960	2,250	2,730	3,100	2,910	2,910	2,560	1,960	1,350	1,050	1,050
20	1,830	1,960	2,250	2,730	3,100	2,910	2,910	2,560	1,960	1,350	1,050	1,050
21	1,830	2,100	2,250	2,730	3,100	2,910	2,910	2,560	1,960	1,350	1,050	1,050
22	1,830	2,100	2,250	2,730	3,100	2,910	2,910	2,560	1,830	1,350	1,050	1,050
23	1,830	2,100	2,250	3,100	3,100	2,910	2,910	2,560	1,830	1,350	1,050	1,050
24	1,830	2,100	2,250	2,730	3,100	2,910	2,910	2,560	1,830	1,350	1,050	1,050
25	1,830	2,100	2,250	2,730	3,100	3,100	2,910	2,560	1,830	1,240	1,050	1,050
26	1,830	2,100	2,400	2,730	3,100	3,100	2,910	2,560	1,830	1,240	1,050	1,050
27	1,830	2,100	2,400	2,730	3,100	3,100	2,910	2,560	1,830	1,240	1,050	1,050
28	1,830	2,100	2,400	2,910	3,100	3,300	2,910	2,560	1,830	1,240	1,050	1,050
29	1,830	2,100	2,400	2,910	.....	3,300	2,910	2,560	1,830	1,240	1,050	1,140
30	1,830	2,100	2,400	2,910	.....	3,300	2,910	2,560	1,830	1,240	1,050	1,140
31	1,830	.....	2,400	2,910	.....	3,300	.....	2,560	.....	1,140	1,050	.....

Daily discharge, in second-feet, of Klamath River at Keno, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	1,140	1,350	1,580	1,830	2,250	2,250	2,730	3,730	3,960	3,300	1,960	1,350
2.....	1,140	1,350	1,580	1,830	2,250	2,400	2,730	3,730	3,960	3,300	1,960	1,350
3.....	1,140	1,350	1,580	1,830	2,250	2,400	2,730	3,730	3,960	3,300	1,960	1,350
4.....	1,140	1,350	1,580	1,830	2,250	2,250	2,730	3,960	3,960	3,100	1,960	1,350
5.....	1,140	1,350	1,580	1,830	2,250	2,250	2,730	3,960	3,960	3,100	1,960	1,350
6.....	1,140	1,350	1,580	1,830	2,250	2,250	2,910	3,960	3,960	3,100	1,960	1,350
7.....	1,140	1,350	1,580	1,830	2,250	2,250	2,910	3,960	3,960	3,100	1,960	1,350
8.....	1,140	1,350	1,700	1,830	2,100	2,250	2,910	3,960	3,960	3,100	1,830	1,350
9.....	1,140	1,350	1,700	1,830	2,100	2,250	2,910	3,960	3,960	3,100	1,830	1,350
10.....	1,140	1,350	1,700	1,830	2,100	2,250	2,910	3,960	3,960	2,910	1,830	1,350
11.....	1,140	1,350	1,700	1,700	2,100	2,250	3,100	3,960	3,960	2,910	1,830	1,350
12.....	1,140	1,350	1,700	1,830	2,100	2,250	3,100	3,960	3,730	2,910	1,830	1,240
13.....	1,140	1,350	1,700	1,960	2,100	2,250	3,100	3,960	3,730	2,910	1,830	1,240
14.....	1,140	1,350	1,700	2,100	2,100	2,250	3,100	3,960	3,730	2,910	1,700	1,240
15.....	1,140	1,350	1,700	1,960	2,100	2,400	3,100	3,960	3,730	2,910	1,700	1,240
16.....	1,140	1,460	1,700	2,100	2,100	2,400	3,300	3,960	3,730	2,910	1,700	1,240
17.....	1,240	1,460	1,700	2,100	2,100	2,400	3,300	3,960	3,730	2,730	1,580	1,240
18.....	1,240	1,460	1,700	2,100	2,100	2,400	3,300	3,960	3,730	2,730	1,580	1,240
19.....	1,240	1,460	1,700	2,250	2,100	2,400	3,510	3,960	3,730	2,730	1,580	1,240
20.....	1,240	1,460	1,700	2,250	2,100	2,400	3,510	3,960	3,510	2,730	1,580	1,240
21.....	1,240	1,580	1,700	2,250	2,100	2,400	3,510	3,960	3,510	2,730	1,580	1,240
22.....	1,240	1,580	1,700	2,250	2,250	2,400	3,510	3,960	3,510	2,500	1,460	1,240
23.....	1,240	1,580	1,700	2,250	2,250	2,400	3,510	3,960	3,510	2,400	1,460	1,240
24.....	1,240	1,580	1,700	2,250	2,250	2,400	3,510	3,960	3,510	2,400	1,460	1,240
25.....	1,240	1,580	1,700	2,250	2,250	2,560	3,510	3,960	3,510	2,250	1,460	1,240
26.....	1,240	1,580	1,700	2,250	2,250	2,560	3,510	3,960	3,510	2,250	1,460	1,240
27.....	1,240	1,580	1,830	2,250	2,250	2,560	3,730	3,960	3,510	2,250	1,460	1,240
28.....	1,350	1,580	1,830	2,250	2,250	2,560	3,730	3,960	3,300	2,250	1,460	1,240
29.....	1,350	1,580	1,830	2,250	-----	2,560	3,730	3,960	3,300	2,100	1,460	1,240
30.....	1,350	1,580	1,830	2,250	-----	2,560	3,730	3,960	3,300	2,100	1,460	1,240
31.....	1,350	-----	1,830	2,250	-----	2,560	-----	3,960	-----	2,100	1,350	-----
1906-7.												
1.....	1,240	1,460	1,700	1,900	2,200	3,660	4,530	4,990	4,120	3,060	1,830	1,450
2.....	1,240	1,460	1,700	1,900	2,360	3,660	4,530	4,990	4,080	3,000	1,760	1,390
3.....	1,240	1,460	1,830	1,900	2,520	3,660	4,530	4,990	4,040	2,960	1,700	1,390
4.....	1,240	1,460	1,830	1,900	2,520	3,660	4,990	4,990	4,000	2,910	1,680	1,390
5.....	1,240	1,460	1,830	1,900	2,690	3,870	4,760	4,990	3,950	2,870	1,660	1,350
6.....	1,240	1,460	1,830	1,900	2,690	3,870	4,760	4,990	3,890	2,780	1,630	1,330
7.....	1,240	1,460	1,830	1,900	2,870	3,870	4,760	4,990	3,870	2,740	1,620	1,330
8.....	1,240	1,460	1,830	1,900	2,870	3,870	4,760	4,990	3,850	2,710	1,610	1,330
9.....	1,240	1,460	1,830	2,050	3,060	3,870	4,990	4,990	3,810	2,690	1,590	1,330
10.....	1,240	1,460	1,830	2,050	3,060	3,870	4,990	4,760	3,760	2,660	1,590	1,330
11.....	1,240	1,460	1,830	2,050	3,060	3,870	4,990	4,760	3,720	2,620	1,570	1,330
12.....	1,240	1,580	1,830	2,050	3,060	3,870	4,990	4,530	3,720	2,600	1,570	1,320
13.....	1,240	1,580	1,830	2,050	3,060	3,870	4,990	4,760	3,720	2,570	1,550	1,320
14.....	1,240	1,580	1,830	2,050	3,250	3,870	4,990	4,760	3,680	2,520	1,530	1,310
15.....	1,240	1,580	1,830	2,050	3,250	3,870	4,760	4,760	3,640	2,440	1,520	1,310
16.....	1,240	1,580	1,830	2,050	3,250	3,870	4,990	4,760	3,580	2,390	1,510	1,310
17.....	1,240	1,580	1,960	2,050	3,250	4,080	4,990	4,760	3,530	2,360	1,510	1,310
18.....	1,240	1,580	1,960	2,050	3,250	4,530	4,990	4,760	3,490	2,330	1,500	1,310
19.....	1,240	1,700	1,960	2,050	3,250	4,300	5,220	4,530	3,450	2,280	1,500	1,290
20.....	1,350	1,700	1,960	2,050	3,450	4,300	5,220	4,530	3,410	2,230	1,470	1,290
21.....	1,350	1,700	1,960	2,050	3,450	4,300	4,990	4,530	3,370	2,220	1,450	1,270
22.....	1,350	1,700	2,100	2,050	3,450	4,300	4,990	4,530	3,350	2,200	1,430	1,270
23.....	1,350	1,700	1,960	2,050	3,450	4,300	4,990	4,300	3,330	2,160	1,390	1,270
24.....	1,350	1,700	1,960	2,050	3,450	4,300	4,990	4,300	3,310	2,120	1,390	1,270
25.....	1,350	1,700	1,960	2,050	3,660	4,300	4,990	4,260	3,310	2,080	1,400	1,240
26.....	1,350	1,700	1,960	2,050	3,660	4,300	4,990	4,210	3,270	2,050	1,400	1,220
27.....	1,350	1,700	1,960	2,050	3,660	4,300	4,990	4,190	3,250	2,020	1,400	1,220
28.....	1,350	1,700	1,960	2,200	3,660	4,300	4,990	4,170	3,190	1,990	1,400	1,220
29.....	1,350	1,700	1,960	2,200	-----	4,530	4,990	4,150	3,160	1,980	1,410	1,240
30.....	1,350	1,700	2,100	2,200	-----	4,530	4,990	4,150	3,100	1,930	1,410	1,270
31.....	1,460	-----	2,100	2,200	-----	4,530	-----	4,150	-----	1,900	1,440	-----

Daily discharge, in second-feet, of Klamath River at Keno, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	1,290	1,510	1,630	2,200	2,520	2,690	2,600	2,360	2,050	1,630	1,030	816
2.....	1,330	1,430	1,630	2,230	2,520	2,640	2,600	2,360	1,980	1,630	1,020	816
3.....	1,280	1,560	1,630	2,280	2,520	2,670	2,570	2,360	1,980	1,570	1,060	804
4.....	1,270	1,470	1,630	2,280	2,600	2,670	2,600	2,360	2,050	1,530	1,060	810
5.....	1,270	1,490	1,630	2,310	2,640	2,670	2,600	2,360	2,050	1,510	1,060	810
6.....	1,270	1,500	1,660	2,340	2,820	2,670	2,620	2,360	2,050	1,500	1,060	798
7.....	1,290	1,500	1,490	2,360	2,730	2,670	2,640	2,360	2,050	1,510	1,060	786
8.....	1,310	1,500	1,630	2,360	2,870	2,670	2,670	2,360	2,050	1,460	1,060	755
9.....	1,310	1,500	1,630	2,360	2,820	2,670	2,670	2,340	2,040	1,410	1,020	770
10.....	1,330	1,510	1,630	2,360	2,690	2,670	2,670	2,340	2,040	1,390	970	780
11.....	1,330	1,510	1,630	2,360	2,690	2,670	2,670	2,340	2,050	1,390	935	780
12.....	1,330	1,510	1,760	2,360	2,670	2,670	2,670	2,340	2,040	1,330	963	780
13.....	1,330	1,510	1,760	2,360	2,690	2,670	2,670	2,340	2,040	1,270	900	780
14.....	1,330	1,510	1,760	2,360	2,690	2,640	2,670	2,330	1,980	1,270	914	770
15.....	1,330	1,510	1,760	2,390	2,690	2,640	2,670	2,310	1,900	1,220	914	775
16.....	1,330	1,510	1,760	2,420	2,690	2,600	2,670	2,360	1,830	1,220	914	780
17.....	1,330	1,510	1,800	2,490	2,690	2,360	2,690	2,380	1,800	1,220	914	780
18.....	1,330	1,510	1,800	2,500	2,690	2,640	2,600	2,280	1,770	1,220	900	804
19.....	1,390	1,510	1,820	2,500	2,670	2,640	2,640	2,300	1,750	1,220	900	780
20.....	1,390	1,530	1,830	2,520	2,690	2,600	2,690	2,340	1,760	1,190	894	792
21.....	1,390	1,550	1,830	2,520	2,690	2,600	2,690	2,280	1,750	1,170	870	810
22.....	1,390	1,580	1,840	2,570	2,690	2,600	2,520	2,300	1,750	1,160	846	810
23.....	1,390	1,610	1,890	2,600	2,690	2,520	2,670	2,310	1,750	1,150	846	816
24.....	1,390	1,610	1,940	2,640	2,690	4,080	2,520	2,280	1,750	1,120	846	822
25.....	1,390	1,620	2,020	2,640	2,640	3,250	2,520	2,280	1,720	1,060	846	828
26.....	1,390	1,620	2,200	2,620	2,600	3,250	2,520	2,120	1,570	1,080	846	834
27.....	1,390	1,620	2,200	2,600	2,600	3,660	2,520	2,200	1,630	1,100	780	840
28.....	1,460	1,620	2,180	2,600	2,640	2,520	2,520	2,200	1,630	1,110	792	840
29.....	1,470	1,630	2,200	2,600	2,690	2,520	2,500	2,200	1,630	1,100	804	834
30.....	1,390	1,630	2,200	2,600	.....	2,360	2,500	2,050	1,570	1,270	816	828
31.....	1,390	.....	2,200	2,600	.....	2,520	.....	2,050	.....	1,060	828	.....
1908-9												
1.....	755	1,290	1,520	1,630	2,590	3,250	3,250	3,040	2,550	1,830	1,200	928
2.....	730	1,310	1,520	1,620	2,600	3,250	3,250	3,040	2,540	1,820	1,180	949
3.....	798	1,330	1,520	1,610	2,520	3,250	3,250	3,020	3,250	1,760	1,180	956
4.....	810	1,390	1,570	1,630	2,600	3,250	3,250	3,020	3,450	1,760	1,160	949
5.....	840	1,370	1,580	1,750	2,660	3,250	3,250	2,950	3,250	1,750	1,140	956
6.....	870	1,370	1,590	1,750	2,660	3,250	3,250	2,960	3,250	1,730	1,130	963
7.....	870	1,380	1,590	1,790	2,670	3,250	3,250	2,910	2,520	1,730	1,120	963
8.....	870	1,390	1,580	1,870	2,690	3,250	3,250	2,890	2,520	1,720	1,110	949
9.....	840	1,390	1,570	1,870	2,690	3,250	3,250	2,910	2,600	1,620	1,090	949
10.....	900	1,390	1,570	1,870	2,690	3,250	3,160	2,660	2,520	1,580	1,070	963
11.....	900	1,390	1,560	1,870	2,690	3,250	3,160	2,710	2,520	1,560	1,050	949
12.....	914	1,390	1,550	1,870	2,830	3,250	3,160	2,800	2,690	1,560	1,030	942
13.....	900	1,390	1,550	1,890	2,830	3,250	3,160	2,710	2,520	1,530	1,020	935
14.....	1,270	1,400	1,560	1,900	2,830	3,250	3,160	2,740	2,310	1,510	1,010	942
15.....	1,160	1,400	1,570	1,930	2,830	3,250	3,160	2,710	2,280	1,490	1,000	949
16.....	1,110	1,450	1,580	2,050	2,830	3,250	3,160	2,730	2,280	1,470	988	949
17.....	1,160	1,460	1,590	2,060	2,870	3,250	3,160	2,690	2,280	1,460	979	914
18.....	1,220	1,510	1,610	2,050	3,020	3,250	3,060	2,710	2,280	1,460	979	921
19.....	1,060	1,510	1,620	2,120	3,060	3,250	3,060	2,730	2,200	1,450	963	914
20.....	1,160	1,390	1,620	2,230	3,060	3,250	3,060	2,660	2,200	1,410	914	870
21.....	1,220	1,500	1,620	2,230	3,060	3,250	3,060	2,690	2,220	1,390	956	935
22.....	1,220	1,450	1,620	2,220	3,060	3,250	3,060	2,690	2,140	1,370	888	942
23.....	1,270	1,430	1,620	2,280	3,060	3,250	3,060	2,730	2,120	1,340	935	935
24.....	1,270	1,410	1,620	2,520	3,060	3,250	3,060	2,660	2,140	1,320	949	970
25.....	1,270	1,430	1,620	2,360	3,060	3,250	3,060	2,690	2,110	1,270	942	956
26.....	1,270	1,450	1,620	2,410	3,060	3,250	3,060	2,710	2,060	1,250	942	949
27.....	1,330	1,510	1,620	2,440	3,060	3,250	3,060	2,520	2,060	1,220	949	949
28.....	1,390	1,510	1,630	2,470	3,250	3,250	3,060	2,660	2,050	1,230	935	956
29.....	1,330	1,510	1,630	2,490	.....	3,250	3,060	2,600	2,050	1,240	956	949
30.....	1,270	1,520	1,630	2,540	.....	3,250	3,030	2,550	2,020	1,270	921	928
31.....	1,270	.....	1,630	2,550	.....	3,250	.....	2,660	.....	1,220	900	.....

Daily discharge, in second-feet, of Klamath River at Keno, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	997	1,140	2,120	2,690	2,780	3,250	4,080	3,870	2,440	1,510	1,020	870
2.....	928	1,130	2,120	2,690	2,780	3,250	4,080	3,870	2,520	1,450	1,020	840
3.....	942	1,160	2,120	2,690	2,780	3,250	4,080	3,870	2,520	1,510	935	780
4.....	942	1,230	2,120	2,690	2,780	3,350	4,080	3,870	2,520	1,510	1,020	870
5.....	949	1,220	2,200	2,780	2,870	3,350	4,080	3,870	2,360	1,510	970	870
6.....	963	1,240	2,200	2,780	2,870	3,350	4,190	3,760	2,360	1,510	970	840
7.....	970	1,200	2,200	2,780	2,870	3,450	4,190	3,760	2,360	1,510	970	870
8.....	979	1,230	2,200	2,870	2,870	3,450	4,190	3,760	2,360	1,450	970	840
9.....	1,040	1,220	2,200	2,870	2,870	3,560	4,190	3,660	2,280	1,450	935	810
10.....	1,020	1,250	2,200	2,870	2,870	3,560	4,080	3,660	2,280	1,450	935	810
11.....	1,040	1,270	2,200	2,870	2,870	3,560	4,190	3,560	2,200	1,450	935	870
12.....	1,020	1,330	2,280	2,870	2,870	3,560	4,080	3,450	2,200	1,390	900	870
13.....	1,020	1,370	2,310	2,870	2,870	3,560	4,190	3,350	2,200	1,390	900	840
14.....	1,030	1,390	1,900	2,690	2,870	3,660	4,080	3,350	2,120	1,330	900	840
15.....	1,020	1,390	2,280	2,690	2,870	3,660	4,190	3,250	2,120	1,330	900	870
16.....	1,040	1,490	2,330	2,690	2,870	3,660	4,190	3,160	2,050	1,330	900	810
17.....	1,060	1,460	2,330	2,690	2,870	3,760	4,190	3,060	1,980	1,220	935	810
18.....	1,110	1,500	2,360	2,690	2,870	3,870	4,190	3,060	1,980	1,220	935	870
19.....	970	1,570	2,520	2,690	2,870	3,870	4,190	2,960	1,980	1,220	900	935
20.....	1,060	1,610	2,360	2,690	2,870	3,870	4,190	2,960	1,830	1,220	840	900
21.....	1,070	1,700	2,520	2,690	2,870	3,870	4,190	2,960	1,830	1,110	870	900
22.....	1,080	1,700	2,520	2,690	2,960	3,980	4,190	2,960	1,760	1,220	870	935
23.....	1,060	1,700	2,520	2,690	2,960	3,980	4,190	2,960	1,760	1,160	870	935
24.....	1,070	1,760	2,520	2,690	2,960	4,080	4,080	2,870	1,760	1,160	870	935
25.....	1,080	1,870	3,250	2,690	3,060	4,080	4,080	2,780	1,760	1,160	870	935
26.....	1,060	1,900	3,250	2,690	3,060	4,080	3,980	2,690	1,700	1,110	840	935
27.....	1,070	1,980	3,250	2,690	3,060	4,080	3,980	2,600	1,510	1,110	870	935
28.....	1,090	1,980	2,690	2,690	3,060	4,080	3,870	2,600	1,630	1,110	810	935
29.....	1,110	2,050	2,690	2,690	.....	4,080	3,870	2,520	1,630	1,060	840	935
30.....	1,060	2,050	2,690	2,690	.....	4,080	3,870	2,600	1,570	1,060	870	935
31.....	1,060	.....	2,690	2,780	.....	4,080	.....	2,600	.....	1,060	810	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1904 to 1906, well defined between 1,400 and 9,000 second-feet, but uncertain for low stages in 1905; 1907 to 1909, fairly well defined above 1,200 second-feet; curve for 1910 not defined.

Monthly discharge of Klamath River at Keno, Oreg., for 1904-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum	Minimum.	Mean.		
1904.					
June.....	8,440	5,300	7,080	421,000	A.
July.....	5,300	3,300	4,180	257,000	A.
August.....	3,100	2,100	2,510	154,000	A.
September.....	2,100	1,700	1,780	106,000	A.
The period.....				938,000	
1904-5.					
October.....	1,830	1,700	1,780	109,000	A.
November.....	2,100	1,960	2,010	120,000	A.
December.....	2,400	2,100	2,240	138,000	A.
January.....	3,100	2,400	2,720	167,000	A.
February.....	3,100	2,910	3,090	172,000	A.
March.....	3,300	2,910	3,050	188,000	A.
April.....	3,300	2,910	3,100	184,000	A.
May.....	2,910	2,560	2,690	165,000	A.
June.....	2,560	1,830	2,160	129,000	A.
July.....	1,830	1,140	1,440	88,500	B.
August.....	1,140	1,050	1,060	65,200	C.
September.....	1,140	1,050	1,060	63,100	C.
The year.....	3,300	1,050	2,200	1,590,000	

Monthly discharge of Klamath River at Keno, Oreg., for 1904-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....	1,350	1,140	1,200	73,800	C.
November.....	1,580	1,350	1,440	85,700	C.
December.....	1,830	1,580	1,690	104,000	C.
January.....	2,250	1,700	2,050	126,000	B.
February.....	2,250	2,100	2,180	121,000	B.
March.....	2,560	2,250	2,380	146,000	B.
April.....	3,730	2,730	3,220	192,000	A.
May.....	3,960	3,730	3,940	242,000	A.
June.....	3,960	3,300	3,710	221,000	A.
July.....	3,300	2,100	2,750	169,000	A.
August.....	1,960	1,350	1,680	103,000	B.
September.....	1,350	1,240	1,280	76,200	B.
The year.....	3,960	1,140	2,290	1,660,000	
1906-7.					
October.....	1,460	1,240	1,290	79,300	B.
November.....	1,700	1,460	1,580	94,000	B.
December.....	2,100	1,700	1,900	117,000	B.
January.....	2,200	1,900	2,030	125,000	B.
February.....	3,660	2,200	3,120	173,000	A.
March.....	4,530	3,660	4,070	250,000	A.
April.....	5,220	4,530	4,920	293,000	A.
May.....	4,990	4,150	4,630	285,000	A.
June.....	4,120	3,100	3,600	214,000	A.
July.....	3,060	1,900	2,430	149,000	A.
August.....	1,830	1,390	1,530	94,100	B.
September.....	1,450	1,220	1,310	78,000	B.
The year.....	5,220	1,220	2,700	1,950,000	
1907-8.					
October.....	1,470	1,270	1,350	83,000	B.
November.....	1,630	1,430	1,540	91,600	B.
December.....	2,200	1,490	1,820	112,000	B.
January.....	2,640	2,200	2,450	151,000	B.
February.....	2,870	2,520	2,670	154,000	B.
March.....	4,080	2,360	2,730	168,000	B.
April.....	2,690	2,500	2,610	155,000	B.
May.....	2,380	2,050	2,300	141,000	C.
June.....	2,050	1,570	1,870	111,000	C.
July.....	1,630	1,060	1,290	79,300	C.
August.....	1,060	780	925	56,900	C.
September.....	840	755	801	47,700	C.
The year.....	4,080	755	1,860	1,350,000	
1908-9.					
October.....	1,390	730	1,070	65,800	B.
November.....	1,520	1,290	1,420	84,500	B.
December.....	1,630	1,520	1,590	97,800	B.
January.....	2,550	1,610	2,060	127,000	A.
February.....	3,250	2,520	2,850	158,000	A.
March.....	3,250	3,250	3,250	200,000	A.
April.....	3,250	3,030	3,140	187,000	A.
May.....	3,040	2,520	2,770	170,000	B.
June.....	3,450	2,020	2,440	145,000	B.
July.....	1,830	1,220	1,490	91,600	B.
August.....	1,200	900	1,020	62,700	B.
September.....	970	870	943	56,100	C.
The year.....	3,450	730	2,000	1,450,000	
1909-10.					
October.....	1,110	928	1,030	63,300	B.
November.....	2,050	1,130	1,500	89,300	B.
December.....	3,250	1,900	2,420	149,000	B.
January.....	2,870	2,690	2,740	168,000	B.
February.....	3,060	2,780	2,890	160,000	B.
March.....	4,080	3,250	3,720	229,000	B.
April.....	4,190	3,870	4,110	245,000	B.
May.....	3,870	2,520	3,230	199,000	B.
June.....	2,520	1,510	2,050	122,000	B.
July.....	1,510	1,060	1,300	79,900	B.
August.....	1,020	810	909	55,900	B.
September.....	935	780	878	52,200	B.
The year.....	4,190	780	2,230	1,610,000	

SPRAGUE RIVER NEAR YAINAX, OREG.

Location.—About sec. 11, T. 36 S., R. 11 E., at wagon bridge 5 miles below Yainax

Agency, and about 12 miles below the mouth of Sycan River.

Records presented.—May 15, 1904, to December 9, 1905.

Drainage area.—1,270 square miles.

Gage.—Vertical staff.

Channel.—Sand; shifts somewhat.

Discharge measurements.—Made from bridge.

Accuracy.—Records fair.

Discharge measurements of Sprague River near Yainax, Oreg., in 1904-5.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904. May 22	Lewis and Landes	<i>Fect.</i> 19.3	<i>Sec.-ft.</i> 3,910	1905. Feb. 22 Dec. 9	C. T. Darley	<i>Fect.</i> 14.1 13.1	<i>Sec.-ft.</i> 589 290
					.....do.....		

Daily gage height, in feet, of Sprague River near Yainax, Oreg., for 1904-5.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
1.....		18.8	14.9	14.6	14.2	13.9	13.8	14.5	14.4
2.....		18.8	14.9	14.5	14.2	13.9	13.8	14.5	14.3
3.....		18.7	14.9	14.8	14.2	13.9	13.9	14.6	14.3
4.....		18.7	14.9	14.8		13.9	13.9	14.6	14.4
5.....		18.7	14.9	14.7		14.0	13.9	14.6	14.4
6.....		18.6	14.9	14.7		14.1	13.9	14.5	14.1
7.....		18.6	14.8	14.8		14.0	13.9	14.5	14.0
8.....		18.5	14.8	14.8		14.1	13.9	14.5	13.9
9.....		18.5	14.7	14.8		14.1	13.9	14.5	13.8
10.....		18.4	14.7	14.7		14.2	13.9	14.6	13.8
11.....		18.3	14.6	14.7		14.3	13.9	14.6	13.9
12.....		18.2	14.5	14.7		14.1	13.9	14.6	13.8
13.....		18.1	14.5	14.6		14.1	13.9	14.6	13.8
14.....		17.7	14.4	14.6		14.0	14.0	14.7	13.9
15.....	^a 19.8	17.6	14.4	14.5		14.0	14.0	14.7	13.9
16.....		17.4	14.3	14.5		14.0	14.1	14.7	13.9
17.....		17.4	14.3	14.5		14.0	14.2	14.8	13.9
18.....		17.3	14.3	14.5		14.0	14.2	14.8	13.9
19.....		17.2	14.6	14.5		13.9	14.2	14.7	13.9
20.....		17.1	14.6	14.5		13.8	14.2	14.7	13.9
21.....		16.9	14.8	14.5		13.8	14.2	14.6	13.9
22.....		16.9	14.8	14.5		13.8	14.4	14.6	
23.....		16.9	14.8	14.4		13.9	14.4	14.5	
24.....		16.9	14.7	14.4		13.9	14.3	14.5	
25.....		16.8	14.6	14.4		13.9	14.3		
26.....		16.7	14.5	14.4		13.8	14.3		
27.....		16.6	14.5	14.4		13.8	14.4		
28.....		16.4	14.4	14.4		13.8	14.4		
29.....		16.2	14.4	14.3		13.7	14.5		
30.....		15.0	14.5	14.3		13.7	14.5		
31.....			14.5	14.3		13.8			

^a Gage height is from high water mark; date is approximate.

Daily discharge, in second-feet, of Sprague River near Yainax, Oreg., for 1904-5.

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
1.		3,540	940	790	630	520	490	750	710
2.		3,540	940	750	630	520	490	750	670
3.		3,460	940	890	630	520	520	790	670
4.		3,460	940	890		520	520	790	710
5.		3,460	940	840		550	520	790	710
6.		3,380	940	840		590	520	750	590
7.		3,380	890	890		550	520	750	550
8.		3,300	890	890		590	520	750	520
9.		3,300	840	890		590	520	750	490
10.		3,220	840	840		630	520	790	490
11.		3,140	790	840		670	520	790	520
12.		3,060	750	840		590	520	790	490
13.		2,980	750	790		590	520	790	490
14.		2,690	710	790		550	550	840	520
15.	4,390	2,620	710	750		550	550	840	520
16.		2,480	670	750		550	590	840	520
17.		2,480	670	750		550	630	890	520
18.		2,410	670	750		550	630	890	520
19.		2,340	790	750		520	630	840	520
20.		2,270	790	750		490	630	840	520
21.		2,130	890	750		490	630	790	520
22.		2,130	890	750		490	710	790	
23.		2,130	890	710		520	710	750	
24.		2,130	840	710		520	670	750	
25.		2,060	790	710		520	670		
26.		1,990	750	710		490	670		
27.		1,920	750	710		490	710		
28.		1,780	710	710		490	710		
29.		1,650	710	670		460	750		
30.		990	750	670		460	750		
31.			750	670		490			

NOTE.—Daily discharge determined from fairly well defined rating curve.

Monthly discharge of Sprague River near Yainax, Oreg., for 1904-5.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
June.....	3,540	990	2,650	158,000	B.
July.....	940	670	810	49,800	B.
August.....	890	670	775	47,700	B.
October.....	670	460	536	33,000	B.
November.....	750	490	596	35,500	B.
December 1-24.....	890	750	795	37,800	B.
January 1-21.....	710	490	560	23,300	B.

SYCAN RIVER NEAR SILVER LAKE, OREG.

Location.—In sec. 19, T. 32 S., R. 14 E., above Sycan marsh, at private bridge about 30 miles south of Silver Lake.

Records presented.—March 16, 1905, to May 31, 1906.

Drainage area.—195 square miles.

Gage.—Vertical staff.

Channel.—Rock and gravel; practically permanent.

Discharge measurements.—Made from bridge.

Diversions.—Water is diverted for irrigation above the station.

Accuracy.—Records are fair.

Discharge measurements of *Sycan River near Silver Lake Oreg., in 1905-6.*

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 16	Ivan Landes.....	2.40	38	Nov. 7	Ivan Landes.....	1.12	6.0
Apr. 10	.....do.....	3.05	110				
May 2	.....do.....	3.45	163	1906.			
June 12	.....do.....	2.32	69	May 9	Ivan Landes.....	6.20	559
July 30	H. W. King.....	1.27	10.2	31	.....do.....	4.80	344
Oct. 3	Ivan Landes.....	1.70	5.4				

Daily gage height in feet, of *Sycan River near Silver Lake, Oreg., for 1905.*

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1.....		2.6	1.8	1.25	1.4	1.8	16.....	3.35	2.2	1.5	1.0	1.75	1.8
2.....	3.45	2.6	1.8	1.25	1.4	1.7	17.....	3.5	2.15	1.45	1.0	1.75	1.8
3.....	3.35	2.6	1.75	1.1	1.5	1.85	18.....	3.4	2.05	1.45	1.05	1.8	1.8
4.....	3.25	3.0	1.75	1.15	1.5	1.7	19.....	3.3	2.2	1.3	1.05	1.8	1.7
5.....	3.2	3.1	1.7	.8	1.55	1.85	20.....	3.4	2.1	1.35	1.1	1.75	1.85
6.....	3.2	3.1	1.7	.8	1.55	1.8	21.....	2.9	2.0	1.4	1.1	1.75	1.7
7.....	3.25	3.2	1.7	.8	1.55	2.0	22.....	3.0	1.8	1.4	1.15	1.75	1.7
8.....	3.6	3.0	1.6	.8	1.55	1.9	23.....	3.1	1.9	1.4	1.15	1.75	1.85
9.....	3.4	3.0	1.6	.8	1.6	1.8	24.....	3.0	1.9	1.4	1.2	1.75	1.85
10.....	3.35	2.5	1.5	.8	1.65	1.7	25.....	2.9	1.9	1.3	1.25	1.75	1.85
11.....	3.35	2.4	1.5	.8	1.7	1.7	26.....	3.2	1.95	1.25	1.25	1.75	1.85
12.....	3.3	2.3	1.5	.8	1.7	1.8	27.....	3.55	1.9	1.25	1.3	2.0	1.85
13.....	3.4	2.4	1.5	.8	1.75	1.7	28.....	3.1	1.9	1.25	1.3	1.9	1.7
14.....	3.25	2.6	1.5	1.0	1.75	1.7	29.....	2.9	1.85	1.25	1.35	1.8	.....
15.....	3.3	2.4	1.5	1.0	1.75	1.65	30.....	2.8	1.85	1.25	1.35	1.8	.....
							31.....	2.7	.....	1.25	1.4	.....	.....

Daily discharge, in second-feet, of *Sycan River near Silver Lake, Oreg., for 1905.*

Day.	May.	June.	July.	Aug.	Sept.	Oct.	Day.	May.	June.	July.	Aug.	Sept.	Oct.
1.....	160	87	33	10	6	8	16.....	158	60	19	1	10	12
2.....	163	87	33	10	6	5	17.....	177	57	17	1	10	12
3.....	150	87	30	6	8	9	18.....	164	50	17	2	12	17
4.....	138	130	30	7	8	5	19.....	160	58	12	2	12	14
5.....	132	142	28	1	9	9	20.....	172	51	14	3	10	19
6.....	132	142	28	1	9	8	21.....	112	45	15	3	10	14
7.....	138	155	28	1	9	14	22.....	122	34	15	4	10	14
8.....	183	140	24	0	9	11	23.....	134	39	15	4	10	19
9.....	164	140	24	0	11	12	24.....	122	39	15	5	10	19
10.....	158	85	20	0	12	9	25.....	112	39	11	2	10	19
11.....	158	76	20	0	9	9	26.....	146	42	10	2	10	19
12.....	151	68	20	0	9	12	27.....	192	39	10	3	14	24
13.....	164	76	19	0	10	9	28.....	134	39	10	3	11	19
14.....	145	94	19	1	10	9	29.....	118	37	10	5	8	19
15.....	151	76	19	1	10	8	30.....	107	37	10	5	8	19
							31.....	97	.....	10	6	.....	19

NOTE.—These discharges were obtained by the indirect method for shifting channels.

Monthly discharge of *Sycan River near Silver Lake, Oreg., for 1905.*

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu-racy.
	Maximum.	Minimum.	Mean.		
March.....			a 50	3,070	C.
April.....			a 140	8,330	C.
May.....	192	97	146	8,980	B.
June.....	155	34	75.0	4,460	B.
July.....	33	10	18.9	1,160	C.
August.....	10	0	2.87	176	C.
September.....	14	6	9.67	575	C.
October.....	24	5	13.4	824	B.
The period.....				27,600	

a Estimated.

LOST RIVER NEAR CLEAR LAKE, CAL.

Location.—At outlet of Clear Lake, 1 mile below mouth of Willow Creek, 13 miles from Langell.

Records presented.—September 4, 1904, to June 12, 1909.

Drainage area.—550 square miles.

Gage.—Friez automatic installed November 4, 1905; prior to that time, a vertical staff.

Channel.—Rock and gravel; obstructed by growth of aquatic plants during the summer.

Discharge measurements.—Made by wading or from cable.

Winter flow.—River may be frozen for weeks at a time; few notes are available concerning conditions.

Accuracy.—Estimates good except for periods during which channel was obstructed by ice or weeds.

On June 13, 1909, water was shut off by the Clear Lake dam; practically no flow past the station since that time.

Discharge measurements of Lost River near Clear Lake, Cal., in 1904–1909.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
1904.				1907.			
Sept. 7	T. H. Humphreys.....	4.95	10.8	Jan. 30	Hendricks and Sticksel.	7.25	444
25	C. T. Darley.....	5.20	16.0	31	do.....	7.30	497
Oct. 21	F. S. Chapman.....	5.15	14.0	Feb. 6	L. F. Hendricks.....	9.80	2,230
Nov. 6	C. T. Darley.....	5.15	17.6	10	do.....	8.50	1,170
Dec. 9	do.....	5.18	14.0	Mar. 6	do.....	7.80	782
1905.				Apr. 12	do.....	8.70	1,280
Jan. 26	C. T. Darley.....	6.30	161	Apr. 24	do.....	7.20	491
Feb. 3	do.....	7.20	453	May 13	Stevens and Ellsworth.	6.60	235
7	do.....	6.39	216	June 4	C. E. Ellsworth.....	5.90	67
24	do.....	6.01	124	23	do.....	5.68	39
Mar. 7	do.....	6.35	196	July 26	do.....	5.25	13
13	do.....	6.50	252	Aug. 14	do.....	5.27	11
Apr. 3	do.....	7.30	535	Sept. 6	do.....	5.20	8.7
8	do.....	6.24	174	25	do.....	5.25	11
28	do.....	5.26	24	Oct. 14	do.....	5.38	12
June 2	do.....	5.00	7.9	21	do.....	5.35	14
Sept. 11	do.....	5.02	5.8	1908.			
Oct. 30	do.....	5.10	7.6	Feb. 21	C. E. Ellsworth.....	5.55	32
1906.				Apr. 8	do.....	5.80	71
Mar. 2	C. T. Darley.....	6.18	146	May 2	Kimble and Ellsworth.	5.25	17
3	do.....	6.25	157	19	H. Kimble.....	5.70	36
6	do.....	6.60	235	June 25	do.....	4.84	5.2
7	do.....	7.18	452	July 25	do.....	5.00	7.1
8	do.....	7.35	534	Sept. 3	do.....	4.80	2.5
9	do.....	7.18	460	Oct. 8	do.....	5.20	8.6
27	do.....	8.80	1,330	Nov. 23	do.....	5.24	11
Apr. 3	do.....	9.00	1,480	Nov. 25	Kimble and McGlashan	5.23	10.8
6	do.....	9.10	1,610	1909.			
17	do.....	8.50	1,270	Mar. 4	Howard Kimble.....	7.35	622
24	L. F. Hendricks.....	7.50	626	May 3	do.....	6.10	154
May 2	do.....	6.90	365	27	Geiger and Kimble....	5.63	32
June 14	do.....	5.80	58				
July 15	do.....	5.20	13.9				
Oct. 30	do.....	5.20	10.2				

Daily gage height, in feet, of Lost River near Clear Lake, Cal., for 1904–1909.

Day.	Sept.	Day.	Sept.	Day.	Sept.
		1904.		1904.	
1.....		11.....	5.0	21.....	5.0
2.....		12.....	5.0	22.....	5.05
3.....		13.....	5.0	23.....	5.1
4.....	5.0	14.....	5.0	24.....	5.1
5.....	5.0	15.....	5.0	25.....	5.2
6.....	5.0	16.....	5.0	26.....	5.25
7.....	5.0	17.....	5.0	27.....	5.25
8.....	5.0	18.....	5.0	28.....	5.25
9.....	5.0	19.....	5.0	29.....	5.25
10.....	5.0	20.....	5.0	30.....	5.25
				31.....	

Daily gage height, in feet, of Lost River near Clear Lake, Cal., for 1904-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.	5.25	5.2	5.2	5.4	7.3	6.3	6.9	5.3	5.0			
2.	5.25	5.2	5.2	5.4	7.8	6.2	7.5	5.3	5.0			
3.	5.25	5.15		5.4	7.3	6.3	7.2	5.2	5.05			
4.	5.25	5.1		5.4	7.1	6.3	6.9	5.2	5.1			
5.	5.25			5.4	6.8	6.4	6.7	5.1	5.15			
6.	5.25		5.2	5.4	6.5	6.3	6.6	5.1	5.2			
7.	5.25		5.2	5.4	6.3	6.5	6.4	5.15	5.35			
8.	5.25	5.15	5.15	5.4	6.1	6.4	6.2	5.2	5.6			
9.	5.25	5.15	5.15	5.4	5.8	6.3	6.0	5.2	5.9			
10.	5.3	5.15		5.4	5.6	6.2	5.8	5.2	5.8			
11.	5.3	5.15		5.4	5.2	6.2	5.7	5.3	5.7			
12.	5.3			5.4	6.05	6.3	5.8	5.4	5.6			
13.	5.3		5.2	5.4	6.95	6.5	5.7	5.35	5.4			
14.	5.3		5.25	5.6	6.9	6.2	5.5	5.3	5.25			
15.	5.3	5.15	5.3	5.8	6.7	6.1	5.5	5.25	5.1			
16.	5.3	5.2		6.0	6.2	6.3	5.55	5.2	5.0			
17.	5.25	5.2		6.25	5.6	6.9	5.6	5.15	5.0			
18.	5.25	5.2		6.3	5.5	6.7	5.6	5.1	5.0			
19.	5.2			6.3	5.8	6.3	5.7	5.05	5.0			
20.	5.2		5.2	6.3	6.4	6.4	5.5	5.05	5.0			
21.	5.15		5.15	6.35	6.3	6.6	5.5	5.0	5.0			
22.	5.15	5.2	5.2	6.4	6.2	6.9	5.5	5.0	5.0			
23.		5.2	5.2	6.4	6.0	6.9	5.45	5.0	5.0			
24.		5.2		6.45	6.1	6.5	5.4	4.95	5.0			
25.	5.1	5.2		6.5	6.2	6.3	5.4	4.9	5.0			
26.	5.1			6.3	6.0	6.5	5.5	4.9	5.0			
27.	5.1		5.2	6.0	6.1	6.9	5.4	4.95	5.0			
28.	5.1		5.25	6.2	6.2	6.6	5.3	5.0	5.0			
29.		5.2	5.25	6.4		6.7	5.3	5.05	5.0			
30.	5.15	5.2	5.35	6.6		6.0	5.3	5.1	5.0			
31.	5.2			6.8		6.4		5.05				
1905-6.												
1.		5.1	5.15	5.2	5.5	6.45	9.3	6.95	6.45	5.25	5.1	5.1
2.		5.1	5.15	5.2	5.5	6.15	9.1	6.85	6.3	5.2	5.1	5.1
3.		5.1	5.2	5.2	5.5	6.2	9.0	6.8	6.3	5.2	5.1	5.1
4.		5.1	5.2	5.2	5.5	6.15	9.0	6.75	6.3	5.1	5.1	5.1
5.		5.1	5.2	5.2	5.5	6.2	9.05	6.5	6.3	5.05	5.1	5.1
6.		5.1	5.2	5.2	5.5	6.55	9.1	6.45	6.4	5.0	5.1	5.1
7.		5.1	5.2	5.2	5.5	7.1	9.25	6.4	6.6	5.0	5.1	5.1
8.		5.1	5.15	5.2	5.5	7.25	9.3	6.35	6.55	5.0	5.1	5.1
9.		5.1	5.15	5.2	5.5	7.2	9.4	6.3	6.45	5.0	5.1	5.1
10.		5.1	5.15	5.2	5.5	7.4	9.4	6.25	6.2	5.0	5.1	5.1
11.		5.1	5.15	5.3	5.5	7.8	9.3	6.25	6.2	5.3	5.1	5.1
12.		5.1	5.15	5.3	5.5	7.75	9.3	6.2	6.1	5.25	5.1	5.1
13.		5.1	5.15	5.3	5.5	7.75	9.2	6.2	6.1	5.2	5.1	5.2
14.		5.1	5.15	5.4	5.5	7.75	9.0	6.2	6.0	5.2	5.1	5.2
15.		5.1	5.15	5.4	5.75	7.75	8.75	6.2	5.9	5.2	5.1	5.2
16.		5.1	5.2	5.5	5.85	7.75	8.5	6.2	5.85	5.2	5.1	5.2
17.		5.1	5.2	5.55	5.8	7.75	8.4	6.2	5.85	5.2	5.1	5.2
18.		5.1	5.2	5.55	5.8	7.85	8.2	6.2	5.8	5.2	5.1	5.2
19.		5.1	5.2	5.55	6.0	8.0	8.0	6.1	5.7	5.15	5.1	5.2
20.		5.2	5.2	5.55	6.7	8.1	7.8	6.1	5.6	5.15	5.1	5.2
21.		5.15	5.2	5.55	6.8	8.2	7.7	6.05	5.5	5.15	5.1	5.2
22.		5.15	5.2	5.55	6.85	8.3	7.65	6.05	5.5	5.1	5.1	5.2
23.		5.15	5.2	5.55	6.55	8.4	7.55	6.05	5.4	5.1	5.1	5.2
24.		5.15	5.2	5.5	6.25	8.5	7.55	6.0	5.35	5.1	5.1	5.2
25.		5.15	5.2	5.5	6.0	8.7	7.4	6.0	5.3	5.1	5.1	5.2
26.		5.2	5.2	5.5	6.2	8.8	7.25	6.0	5.4	5.1	5.1	5.2
27.		5.2	5.2	5.5	6.9	8.8	7.2	6.2	5.45	5.1	5.1	5.2
28.		5.2	5.2	5.5	6.6	8.8	7.1	6.4	5.35	5.1	5.1	5.2
29.	5.1	5.15	5.2	5.5		8.75	7.0	6.5	5.35	5.1	5.1	5.2
30.	5.1	5.15	5.2	5.5		8.8	7.0	6.6	5.35	5.1	5.1	5.2
31.	5.1		5.2	5.5		9.3		6.6		5.1	5.1	

Daily gage height, in feet, of Lost River near Clear Lake, Cal., for 1904-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	5.2	5.2	5.3	7.00	7.35	7.80	9.35	6.75	.....	5.42	5.30	5.20
2.....	5.2	5.2	5.3	7.00	7.90	7.80	9.40	6.65	.....	5.39	5.29	.....
3.....	5.2	5.2	5.3	6.90	9.20	7.80	9.30	6.60	5.72	5.37	5.28	.....
4.....	5.2	5.3	5.3	6.90	10.50	7.75	9.20	6.55	5.68	5.35	5.28	.....
5.....	5.2	5.3	5.3	6.90	10.10	8.00	9.10	6.55	5.64	5.33	.....	.....
6.....	5.2	5.3	5.3	6.90	9.70	7.85	8.90	.....	5.60	5.30	.....	5.20
7.....	5.2	5.3	5.3	6.90	9.45	7.70	8.90	.....	5.59	5.28	.....	5.20
8.....	5.2	5.3	5.3	6.90	8.95	7.90	9.05	.....	5.60	5.30	.....	5.20
9.....	5.2	5.3	5.3	6.90	8.70	7.90	9.00	.....	5.80	5.30	.....	5.20
10.....	5.2	5.3	5.35	6.90	8.50	7.85	8.85	.....	5.70	5.30	.....	5.20
11.....	5.2	5.3	5.4	6.90	8.40	7.80	8.75	.....	5.68	5.34	5.40	5.18
12.....	5.2	5.3	5.45	6.90	8.25	7.65	8.70	6.60	5.70	5.40	5.38	5.16
13.....	5.2	5.3	5.45	6.90	8.15	7.60	8.70	6.60	.....	5.40	5.35	5.16
14.....	5.2	5.3	5.5	6.80	8.05	7.50	8.65	6.60	.....	.....	5.33	5.16
15.....	5.2	5.3	5.5	6.70	7.95	7.50	8.55	6.58	.....	.....	5.30	5.16
16.....	5.2	5.3	5.5	6.60	7.90	7.55	8.45	6.55	6.30	.....	5.27	.....
17.....	5.2	5.3	5.6	6.50	7.80	8.60	8.35	6.50	6.12	.....	5.20	.....
18.....	5.2	5.3	5.6	6.40	7.80	9.30	8.25	6.45	6.04	.....	5.13	.....
19.....	5.2	5.3	5.7	6.30	7.75	10.00	8.15	6.38	5.95	.....	.....	.....
20.....	5.2	5.3	5.7	6.30	7.75	10.10	8.05	6.38	5.85	.....	.....	.....
21.....	5.2	5.3	5.8	6.30	7.80	10.00	7.65	6.40	5.78	5.27	.....	5.30
22.....	5.2	5.3	5.8	6.30	8.10	10.00	7.55	6.40	5.70	5.27	.....	5.30
23.....	5.2	5.3	5.8	6.30	8.00	9.80	7.40	6.40	5.69	5.25	.....	5.30
24.....	5.2	5.3	6.15	6.30	8.00	9.75	7.30	6.38	5.66	5.24	.....	5.30
25.....	5.2	5.3	6.8	6.00	8.15	9.70	7.20	6.35	5.63	5.23	5.38	5.30
26.....	5.2	5.3	7.2	5.70	8.00	9.50	7.15	6.23	5.61	5.24	5.35	5.30
27.....	5.2	5.3	7.35	5.70	8.05	9.40	7.05	6.20	5.58	5.26	5.30	5.30
28.....	5.2	5.3	7.3	5.70	8.00	9.30	6.90	6.17	5.53	5.30	5.24	5.34
29.....	5.2	5.3	7.15	6.60	.....	9.30	6.85	6.12	5.51	5.30	5.19	.....
30.....	5.2	5.3	7.0	7.50	.....	9.60	6.85	6.08	5.50	5.32	5.18	.....
31.....	5.2	.....	7.0	7.30	.....	9.50	.....	6.04	.....	5.31	5.18	.....
1907-8.												
1.....	.....	.....	5.40	.....	.....	.....	5.42	5.25	5.26	4.84	5.02	4.80
2.....	.....	.....	5.38	.....	5.90	.....	5.48	5.24	5.22	4.84	5.01	4.80
3.....	.....	5.55	5.37	.....	.....	.....	5.52	5.21	5.20	4.84	.....	4.80
4.....	.....	.....	5.39	.....	.....	.....	5.50	5.28	5.16	4.84	.....	4.80
5.....	.....	.....	5.40	.....	.....	.....	5.55	5.36	5.18	4.84	.....	4.80
6.....	.....	.....	5.43	.....	.....	.....	.....	5.32	5.17	.....	.....	4.80
7.....	.....	.....	5.47	.....	.....	.....	.....	5.26	5.16	.....	.....	.....
8.....	.....	.....	5.49	.....	.....	5.80	5.80	5.22	.....	.....	.....	.....
9.....	.....	.....	.....	.....	5.70	5.80	5.78	5.19	.....	.....	5.01	.....
10.....	.....	.....	.....	.....	5.70	5.82	5.77	.....	.....	.....	5.01	.....
11.....	.....	.....	.....	.....	5.68	6.00	5.77	.....	.....	.....	4.99	.....
12.....	.....	.....	.....	.....	5.67	6.50	5.78	.....	.....	.....	5.00	.....
13.....	5.40	.....	.....	.....	5.64	6.90	5.78	.....	5.10	.....	4.99	5.09
14.....	5.40	.....	.....	6.00	5.64	6.85	5.74	.....	5.09	.....	4.95	5.08
15.....	5.39	.....	5.58	6.50	5.62	6.80	5.70	.....	5.07	.....	.....	5.09
16.....	5.37	.....	5.55	7.00	5.60	6.80	5.68	.....	5.04	.....	.....	5.09
17.....	5.36	5.40	5.46	7.00	5.60	6.80	5.67	5.64	4.99	.....	.....	5.10
18.....	5.35	.....	5.44	6.90	5.59	6.80	5.69	5.69	4.98	.....	.....	5.11
19.....	5.35	.....	5.41	6.82	5.57	6.80	5.65	5.69	4.96	.....	.....	5.12
20.....	5.35	.....	5.40	6.88	5.56	6.80	5.61	5.69	4.94	.....	.....	5.16
21.....	.....	5.35	5.46	6.88	5.55	6.75	.....	5.70	.....	.....	.....	5.21
22.....	.....	.....	5.45	6.65	5.55	6.75	.....	5.70	.....	.....	.....	5.22
23.....	.....	.....	6.30	6.60	5.55	.....	.....	5.70	.....	.....	.....	5.20
24.....	.....	5.50	6.90	6.65	5.55	.....	.....	5.70	.....	.....	.....	5.19
25.....	.....	.....	6.78	6.50	5.58	.....	.....	5.44	4.84	4.95	.....	5.19
26.....	.....	.....	6.70	6.50	5.80	.....	5.54	5.34	4.82	4.98	.....	5.20
27.....	.....	.....	6.02	6.30	5.95	.....	5.56	5.26	4.81	5.01	.....	5.21
28.....	.....	.....	6.55	6.30	6.05	.....	5.48	5.20	4.84	5.01	.....	.....
29.....	.....	.....	.....	6.18	.....	5.65	5.39	.....	4.84	5.01	.....	.....
30.....	.....	.....	.....	6.20	.....	5.65	5.32	.....	4.84	5.02	4.80	.....
31.....	.....	.....	.....	.....	.....	5.50	.....	5.29	.....	5.02	4.80	.....

Daily gage height, in feet, of Lost River at Clear Lake, Cal., for 1904-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....		5.16	5.18	5.32	6.09		6.94		5.72			
2.....		5.16	5.17	5.35	6.10		7.00		5.61			
3.....		5.15	5.16	5.35	6.08		6.96	6.09	5.52			
4.....	5.20	5.15	5.16	5.60	5.76	7.33		6.04	5.43			
5.....	5.20	5.15	5.16	5.70	5.68	7.36		5.96	5.36			
6.....	5.20	5.14	5.16	5.65	5.63	7.38		5.91	5.26			
7.....	5.19	5.14	5.14	6.14	6.20	7.14		5.88	5.21			
8.....	5.20	5.14	5.14	6.10	6.20	7.10		5.86	5.16			
9.....	5.20		5.14	6.50	6.20	6.80			5.12			
10.....	5.21		5.14	6.60	6.20	6.76		5.89	5.07			
11.....	5.25		5.14		6.20	6.78	7.00	5.87	4.91			
12.....	5.30		5.13		6.25	6.80	7.01		4.69			
13.....	5.35		5.16				7.01					
14.....	5.40		5.16			6.68	7.03					
15.....	5.45	5.18	5.16			6.72	7.04					
16.....	5.55	5.18	5.16	7.31		6.86	7.05	5.65				
17.....	5.60	5.17		7.42		6.91	7.07	5.63				
18.....	5.60	5.16		7.45		6.84		5.62				
19.....	5.40	5.17		7.60		7.00		5.58				
20.....	5.25	5.22	5.16	7.62		6.90		5.55				
21.....	5.24	5.25	5.16			6.92		5.55				
22.....	5.20	5.26	5.16			6.90		5.53				
23.....	5.14	5.29	5.16			6.94		5.53				
24.....	5.14	5.26	5.16	7.40		6.86		5.58				
25.....	5.14	5.25	5.16	7.39		6.83		5.59				
26.....	5.14	5.22	5.16	7.39		6.85		5.53				
27.....	5.13	5.22	5.18	7.39		6.90		5.63				
28.....	5.13	5.22	5.20	7.38		6.94		5.63				
29.....	5.14	5.18	5.23	6.00		6.86		5.74				
30.....	5.15	5.18	5.26	6.05		6.82		5.89				
31.....	5.16		5.29	6.10		6.84		5.83				

Daily discharge, in second-feet, of Lost River near Clear Lake, Cal., for 1904-1909.

Day.	Sept.	Day.	Sept.	Day.	Sept.
1904.					
1.....	9	11.....	9	21.....	9
2.....	9	12.....	9	22.....	10
3.....	9	13.....	9	23.....	12
4.....	9	14.....	9	24.....	12
5.....	9	15.....	9	25.....	17
6.....	9	16.....	9	26.....	20
7.....	9	17.....	9	27.....	20
8.....	9	18.....	9	28.....	20
9.....	9	19.....	9	29.....	20
10.....	9	20.....	9	30.....	20
				31.....	

Daily discharge, in second-feet, of Lost River at Clear Lake, Cal., for 1904-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	20	17	17	31	508	184	365	23	9	.....	.....	.....
2.....	20	17	17	31	695	160	582	23	9	.....	.....	.....
3.....	20	14	17	31	508	184	472	17	10	.....	.....	.....
4.....	20	12	17	31	436	184	365	17	12	.....	.....	.....
5.....	20	12	17	31	332	210	300	12	14	.....	.....	.....
6.....	20	13	17	31	238	184	268	12	17	.....	.....	.....
7.....	20	14	17	31	184	238	210	14	27	.....	.....	.....
8.....	20	14	14	31	138	210	160	17	53	.....	.....	.....
9.....	20	14	14	31	81	184	117	17	98	.....	.....	.....
10.....	23	14	14	31	53	160	81	17	81	.....	.....	.....
11.....	23	14	15	31	17	160	66	23	66	.....	.....	.....
12.....	23	14	16	31	128	184	81	31	53	.....	.....	.....
13.....	23	14	17	31	382	238	66	27	31	.....	.....	.....
14.....	23	14	20	53	365	160	41	23	20	.....	.....	.....
15.....	23	14	23	81	300	138	41	20	12	.....	.....	.....
16.....	23	17	23	117	160	184	47	17	9	.....	.....	.....
17.....	20	17	23	172	53	365	53	14	9	.....	.....	.....
18.....	20	17	23	184	41	300	53	12	9	.....	.....	.....
19.....	17	17	23	184	81	184	66	10	9	.....	.....	.....
20.....	17	17	23	184	210	210	41	10	9	.....	.....	.....
21.....	14	17	14	197	184	268	41	9	9	.....	.....	.....
22.....	14	17	17	210	160	365	41	9	9	.....	.....	.....
23.....	14	17	17	210	117	365	36	9	9	.....	.....	.....
24.....	12	17	17	224	138	238	31	8	9	.....	.....	.....
25.....	12	17	17	238	160	184	31	6	9	.....	.....	.....
26.....	12	17	17	184	117	238	41	6	9	.....	.....	.....
27.....	12	17	17	117	138	365	31	8	9	.....	.....	.....
28.....	12	17	20	160	160	268	23	9	9	.....	.....	.....
29.....	13	17	20	210	.....	300	23	10	9	.....	.....	.....
30.....	14	17	27	268	.....	117	23	12	9	.....	.....	.....
31.....	17	.....	29	332	.....	210	.....	10	.....	.....	.....	.....
1905-6.												
1.....	.....	12	14	12	30	206	1,710	374	206	14	8	8
2.....	.....	12	14	12	30	129	1,570	338	164	12	8	8
3.....	.....	12	17	12	30	140	1,500	320	164	12	8	8
4.....	.....	12	17	12	30	129	1,500	303	164	8	8	8
5.....	.....	12	17	12	30	140	1,540	220	164	6	8	8
6.....	.....	12	17	12	30	236	1,570	206	191	5	8	8
7.....	.....	12	17	12	30	432	1,680	191	252	5	8	8
8.....	.....	12	14	12	30	496	1,710	178	236	5	8	8
9.....	.....	12	14	12	30	474	1,780	164	206	5	8	8
10.....	.....	12	14	12	30	562	1,780	152	140	5	8	8
11.....	.....	12	14	17	30	755	1,710	152	140	17	8	8
12.....	.....	12	14	17	30	728	1,710	140	118	14	8	8
13.....	.....	12	14	17	30	728	1,640	140	118	12	8	12
14.....	.....	12	14	23	30	728	1,500	140	98	12	8	12
15.....	.....	12	14	23	59	728	1,330	140	81	12	8	12
16.....	.....	12	17	30	74	728	1,160	140	74	12	8	12
17.....	.....	12	17	35	66	728	1,100	140	74	12	8	12
18.....	.....	12	17	35	66	782	980	140	66	12	8	12
19.....	.....	12	17	35	98	865	865	118	52	10	8	12
20.....	.....	17	17	35	286	920	755	118	40	10	8	12
21.....	.....	14	17	35	320	980	702	108	30	10	8	12
22.....	.....	14	17	35	337	1,040	678	108	30	8	8	12
23.....	.....	14	17	35	236	1,100	631	108	23	8	8	12
24.....	.....	14	17	30	152	1,160	631	98	20	8	8	12
25.....	.....	14	17	30	98	1,300	562	98	17	8	8	12
26.....	.....	17	17	30	140	1,360	496	98	23	8	8	12
27.....	.....	17	17	30	356	1,360	474	140	26	8	8	12
28.....	.....	17	17	30	252	1,360	432	191	20	8	8	12
29.....	12	14	17	30	.....	1,330	392	220	20	8	8	12
30.....	12	14	17	30	.....	1,360	392	252	20	8	8	12
31.....	12	.....	17	30	.....	1,710	.....	252	.....	8	8	.....

Daily discharge, in second-feet, of Lost River near Clear Lake, Cal., for 1904-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	12	12	17	392	540	755	1,790	292	75	18	12	8
2.....	12	12	17	392	810	755	1,840	253	60	16	12	8
3.....	12	12	17	352	1,660	755	1,740	234	45	16	11	8
4.....	12	17	17	352	3,020	728	1,660	217	41	14	11	8
5.....	12	17	17	352	2,560	865	1,580	217	37	14	12	8
6.....	12	17	17	352	2,120	782	1,430	219	33	12	13	8
7.....	12	17	17	352	1,880	702	1,430	222	32	11	14	8
8.....	12	17	17	352	1,460	810	1,540	224	33	12	14	8
9.....	12	17	17	352	1,300	810	1,500	227	55	12	15	8
10.....	12	17	20	352	1,160	782	1,400	229	43	12	16	8
11.....	12	17	23	352	1,100	755	1,330	232	41	14	17	7
12.....	12	17	26	352	1,010	678	1,300	234	43	17	16	7
13.....	12	17	26	352	950	654	1,300	234	68	17	14	7
14.....	12	17	30	312	892	608	1,260	234	93	17	14	7
15.....	12	17	30	272	838	608	1,200	227	118	16	12	7
16.....	12	17	30	234	810	631	1,130	217	143	15	11	8
17.....	12	17	40	200	755	1,230	1,070	200	104	14	8	9
18.....	12	17	40	170	755	1,740	1,010	185	90	13	6	10
19.....	12	17	52	143	728	2,450	950	165	76	12	7	10
20.....	12	17	52	143	728	2,560	892	165	62	11	9	11
21.....	12	17	66	143	755	2,450	678	170	53	11	10	12
22.....	12	17	66	143	920	2,450	631	170	43	11	12	12
23.....	12	17	66	143	865	2,230	562	170	42	10	13	12
24.....	12	17	129	143	865	2,180	518	165	39	10	15	12
25.....	12	17	320	83	950	2,120	474	156	36	9	16	12
26.....	12	17	474	43	865	1,930	453	127	34	10	14	12
27.....	12	17	540	43	892	1,840	412	120	31	10	12	12
28.....	12	17	518	43	865	1,740	352	114	27	12	10	14
29.....	12	17	452	234	-----	1,740	332	104	25	12	8	14
30.....	12	17	392	608	-----	2,020	332	97	24	13	7	14
31.....	12	-----	392	518	-----	1,930	-----	90	-----	12	7	-----
1907-8.												
1.....	14	28	17	189	101	100	25	16.2	16.7	5.0	8.1	2.5
2.....	14	28	16	182	81	95	30	15.8	14.9	5.0	7.8	2.5
3.....	15	28	16	175	77	90	33	14.4	14.0	5.0	7.8	2.5
4.....	15	28	16	168	73	84	31	17.6	12.6	5.0	7.8	2.5
5.....	15	28	17	161	69	79	36	22	13.3	5.0	7.8	2.5
6.....	16	26	19	154	64	74	46	19.6	12.9	5.8	7.8	2.5
7.....	16	26	22	147	60	70	56	16.7	12.6	5.8	7.8	3.1
8.....	16	24	23	140	56	66	66	14.9	12.2	5.8	7.8	3.7
9.....	17	24	24	133	52	66	63	13.6	11.8	5.8	7.8	4.3
10.....	17	22	25	126	52	69	62	18.0	11.5	5.8	7.8	4.7
11.....	17	21	26	119	50	98	62	22	11.2	5.8	7.3	5.4
12.....	17	21	28	112	48	220	63	28	10.8	5.8	7.5	6.1
13.....	17	19	29	105	45	356	63	30	10.4	5.8	7.3	6.8
14.....	17	19	30	98	45	338	58	33	10.1	5.8	6.6	6.6
15.....	16	17	31	220	42	320	52	37	9.5	5.8	6.4	6.8
16.....	16	17	28	392	40	320	50	41	8.7	5.8	6.1	6.8
17.....	15	17	21	392	40	320	48	45	7.3	5.8	5.9	7.0
18.....	14	18	20	356	39	320	51	51	7.1	5.8	5.6	7.2
19.....	14	19	18	327	37	320	46	51	6.8	5.8	5.4	7.5
20.....	14	20	17	349	36	320	41	51	6.4	5.8	5.1	8.4
21.....	14	21	21	349	36	303	40	52	6.1	5.8	4.8	9.7
22.....	14	22	20	269	36	303	39	52	5.8	5.8	4.6	10.0
23.....	14	23	143	252	36	266	38	52	5.6	5.8	4.3	9.3
24.....	18	24	352	269	36	229	37	52	5.3	5.8	4.0	9.1
25.....	18	23	304	220	38	192	36	27	5.0	6.6	3.7	9.1
26.....	20	22	272	220	66	157	35	21	4.7	7.1	3.5	9.3
27.....	20	21	242	164	90	120	36	16.7	4.6	7.8	3.2	9.7
28.....	22	20	217	164	108	83	30	14.0	5.0	7.8	3.0	9.7
29.....	22	19	210	136	104	46	23	15.0	5.0	7.8	2.7	9.6
30.....	24	18	203	140	-----	46	19.6	17.0	5.0	8.1	2.5	9.5
31.....	24	-----	196	120	-----	31	-----	18.0	-----	8.1	2.5	-----

Daily discharge, in second-feet, of Lost River near Clear Lake, Cal., for 1904-1909—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	9.5	8.4	8.8	14	146	450	436	160	56	.....	.....	.....
2.....	9.4	8.4	8.6	15	149	490	460	155	31	.....	.....	.....
3.....	9.3	8.2	8.4	15	144	550	444	146	23	.....	.....	.....
4.....	9.3	8.2	8.4	29	65	615	444	133	18	.....	.....	.....
5.....	9.3	8.2	8.4	51	47	630	448	113	15	.....	.....	.....
6.....	9.3	7.9	8.4	40	36	640	450	100	12	.....	.....	.....
7.....	9.1	7.9	7.9	160	177	520	452	93	9.7	.....	.....	.....
8.....	9.3	7.9	7.9	149	177	500	452	88	8.4	.....	.....	.....
9.....	9.3	8.0	7.9	270	177	380	454	92	7.5	.....	.....	.....
10.....	9.7	8.2	7.9	305	177	364	456	96	6.4	.....	.....	.....
11.....	11.2	8.3	7.9	200	177	372	460	91	3.6	.....	.....	.....
12.....	13.0	8.4	7.7	180	192	380	464	80	2.0	.....	.....	.....
13.....	15.0	8.5	8.4	170	240	355	464	65	.....	.....	.....	.....
14.....	17.0	8.7	8.4	200	310	333	472	52	.....	.....	.....	.....
15.....	20	8.8	8.4	400	450	348	476	45	.....	.....	.....	.....
16.....	26	8.8	8.4	655	550	404	480	40	.....	.....	.....	.....
17.....	29	8.6	8.4	661	600	424	488	36	.....	.....	.....	.....
18.....	29	8.4	8.4	678	620	396	488	33	.....	.....	.....	.....
19.....	17.0	8.6	8.4	760	620	460	470	28	.....	.....	.....	.....
20.....	11.2	10.0	8.4	771	600	420	440	26	.....	.....	.....	.....
21.....	10.8	11.2	8.4	740	570	428	400	26	.....	.....	.....	.....
22.....	9.3	11.5	8.4	700	500	420	380	24	.....	.....	.....	.....
23.....	7.9	12.6	8.4	675	470	436	350	24	.....	.....	.....	.....
24.....	7.9	11.5	8.4	650	460	404	310	28	.....	.....	.....	.....
25.....	7.9	11.2	8.4	645	450	392	280	28	.....	.....	.....	.....
26.....	7.9	10.0	8.4	645	430	400	245	24	.....	.....	.....	.....
27.....	7.7	10.0	8.8	645	425	420	220	36	.....	.....	.....	.....
28.....	7.7	10.0	9.3	640	430	436	185	36	.....	.....	.....	.....
29.....	7.9	8.8	10.4	123	.....	404	165	60	.....	.....	.....	.....
30.....	8.2	8.8	11.5	136	.....	388	150	96	.....	.....	.....	.....
31.....	8.4	.....	12.6	149	.....	396	.....	81	.....	.....	.....	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1904 and 1905, fairly well defined; 1906, well defined above and fairly well below 400 second-feet; 1907, Jan. 1 to Aug. 29, 1908, and Aug. 30, 1908, to June 12, 1909, three fairly well-defined curves. Discharge for days for which gage heights are missing estimated from hydrograph or by interpolation. No allowance made for effect of ice.

Monthly discharge of Lost River near Clear Lake, Cal., for 1904-1909.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
September.....	20	9	11.3	673	C.
1904-5.					
October.....	23	12	18.1	1,110	C.
November.....	17	12	15.5	923	C.
December.....	27	14	18.7	1,150	B.
January.....	332	31	120	7,380	B.
February.....	695	17	217	12,000	B.
March.....	365	117	224	13,800	B.
April.....	582	23	127	7,560	B.
May.....	31	6	14.6	890	B.
June.....	98	9	21.6	1,290	B.
July.....	.....	.....	a 7.0	430	D.
August.....	.....	.....	a 6.0	369	D.
September.....	.....	.....	a 7.0	417	D.
The year.....	695	.....	66.4	47,300	

a Estimated.

Monthly discharge of Lost River near Clear Lake, Cal., for 1904-1909—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905-6.					
October.....			a 10.0	615	C.
November.....	17	12	13.1	780	C.
December.....	17	14	16.0	984	C.
January.....	35	12	23.6	1,450	C.
February.....	356	30	106	5,890	B.
March.....	1,710	129	797	49,000	A.
April.....	1,780	392	1,150	68,400	A.
May.....	374	98	177	10,900	A.
June.....	252	17	99.2	5,900	B.
July.....	17	5	9.4	578	B.
August.....	8	8	8.0	492	C.
September.....	12	8	10.4	619	C.
The year.....	1,780	5	202	146,000	
1906-7.					
October.....	12	12	12.0	738	C.
November.....	17	12	16.5	982	C.
December.....	540	17	127	7,810	C.
January.....	608	43	267	16,400	C.
February.....	3,020	540	1,140	63,300	A.
March.....	2,560	608	1,360	83,600	A.
April.....	1,840	332	1,070	63,700	A.
May.....	292	90	191	11,700	B.
June.....	143	24	54.9	3,270	B.
July.....	18	9	13.0	799	B.
August.....	17	6	11.9	732	B.
September.....	14	7	9.63	573	B.
The year.....	3,020	6	356	254,000	
1907-8.					
October.....	24	14	16.8	1,030	B.
November.....	28	17	22.1	1,320	B.
December.....	352	16	84.6	5,200	B.
January.....	392	98	205	12,600	B.
February.....	108	36	57.1	3,280	B.
March.....	356	31	177	10,900	B.
April.....	66	19.6	43.9	2,610	B.
May.....	52	13.6	28.9	1,780	B.
June.....	16.7	4.6	9.10	541	B.
July.....	8.1	5.0	6.08	374	B.
August.....	8.1	2.5	5.82	358	D.
September.....	10	2.5	6.48	386	B.
The year.....	392	2.5	55.2	40,400	
1908-9.					
October.....	29	7.7	12.0	738	B.
November.....	12.6	7.9	9.13	543	B.
December.....	12.6	7.7	8.66	532	C.
January.....	771	14	370	22,800	C.
February.....	620	36	335	18,600	C.
March.....	630	333	437	26,900	C.
April.....	488	150	396	23,600	C.
May.....	160	24	68.9	4,240	D.
June 1-12.....	56	2	16	381	D.
The period.....				98,300	

a Estimated.

LOST RIVER AT OLENE, OREG.

Location.—In sec. 14, T. 39 S., R. 10 E., at highway bridge at Olene.

Records presented.—May 24 to July 30, 1904; May 19, 1907, to September 30, 1910.

Drainage area.—1,290 square miles.

Gage.—Vertical staff; also hook gage used since April 23, 1909.

Channel.—A permanent rocky riffle 200 feet below the gage controls the gage heights.

Discharge measurements.—Made from highway bridge except during extreme low water, when better measurements can be made by wading at the riffle.

Winter flow.—Gage heights not seriously affected by ice.

Diversions.—At a point 5 miles below this station a dam has been built to divert the water of Lost River through a canal into Klamath River and thus reclaim lands bordering on Tule Lake.

Accuracy.—Conditions favorable for good results.

Cooperation.—Station maintained by the United States Reclamation Service since May, 1909, but the records have been worked up by the United States Geological Survey.

Discharge measurements of Lost River at Olene, Oreg., in 1904, 1907-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1908.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 23	Landes and Lewis.....	5.80	961	Feb. 15	C. E. Ellsworth.....	4.82	186
June 10	do.....	4.90	322	19	do.....	4.82	176
1907.				26	do.....	4.75	173
May 20	Stevens and Ellsworth.	5.20	349	Mar. 16	do.....	6.15	958
31	C. E. Ellsworth.....	5.05	256	17	do.....	7.00	1,690
June 7	do.....	4.90	220	20	do.....	6.30	1,120
14	do.....	4.88	173	Apr. 10	do.....	4.95	238
18	do.....	5.03	257	14	do.....	4.87	205
20	do.....	5.05	256	22	do.....	4.75	168
24	do.....	4.98	222	May 1	Ellsworth and Kimble.	4.70	155
28	do.....	4.85	184	13	H. Kimble.....	4.65	127
July 2	do.....	4.80	145	June 11	do.....	4.60	112
6	do.....	4.75	131	27	do.....	4.60	122
24	do.....	4.65	132	July 23	do.....	4.50	125
27	do.....	4.65	130	Sept. 5	do.....	4.50	108
Aug. 1	do.....	4.58	106	Oct. 24	do.....	4.60	97
9	do.....	4.60	122	Nov. 23	Kimble and McGlashan	4.63	109
13	do.....	4.62	130	1909.			
15	do.....	4.60	116	Feb. 26	Howard Kimble.....	6.30	1,070
22	do.....	4.60	117	Mar. 6	do.....	7.40	2,000
Sept. 5	do.....	4.62	129	May 25	A. E. Geiger.....	4.71	191
18	do.....	4.62	126	July 10	do.....	4.49	34
23	do.....	4.62	118	Sept. 19	John Yadon.....	4.47	95
26	do.....	4.62	128	25	do.....	4.50	112
Oct. 1	do.....	4.63	124	Oct. 15	do.....	4.52	145
8	do.....	4.63	118	22	do.....	4.52	105
16	do.....	4.63	129	Nov. 23	do.....	7.36	1,720
Nov. 6	do.....	4.70	148	1910.			
9	do.....	4.70	146	Aug. 3	Leland Moser.....	4.45	90
16	do.....	4.68	134	Sept. 19	do.....	4.53	124

Daily gage height, in feet, of Lost River at Olene, Oreg., for 1904, 1907-1910.

Day.	May.	June.	July.	Day.	May.	June.	July.	Day.	May.	June.	July.
1904				1904.				1904.			
1.....		5.00	4.50	11.....		4.85	4.50	21.....			4.55
2.....		5.05	4.50	12.....		4.85	4.50	22.....			4.50
3.....		5.05	4.50	13.....		4.80	4.50	23.....			4.50
4.....		4.95	4.40	14.....		4.80	4.50	24.....		5.65	4.50
5.....		5.00	4.40	15.....		4.80	4.45	25.....		5.57	4.50
6.....		4.95	4.40	16.....		4.75	4.40	26.....		5.35	4.50
7.....		4.95	4.50	17.....		4.70	4.40	27.....		5.28	4.50
8.....		4.95	4.50	18.....		4.70	4.40	28.....		5.32	4.50
9.....		4.90	4.50	19.....		4.60	4.40	29.....		5.21	4.50
10.....		4.90	4.50	20.....		4.60	4.40	30.....		5.12	4.50
								31.....		5.08	

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1907.						1907.					
1.....		5.15	4.80	4.55	4.60	16.....		5.00	4.70	4.50	4.60
2.....		5.15	4.80	4.55	4.60	17.....		5.00	4.70	4.50	4.60
3.....		5.15	4.80	4.55	4.60	18.....		4.98	4.70	4.50	4.60
4.....		5.15	4.80	4.55	4.60	19.....		5.20	5.05	4.70	4.50
5.....		5.10	4.80	4.55	4.60	20.....		5.20	5.05	4.70	4.50
6.....		5.05	4.75	4.55	4.60	21.....		5.20	5.05	4.70	4.60
7.....		4.55	4.75	4.55	4.60	22.....		5.20	5.05	4.60	4.60
8.....		4.80	4.75	4.55	4.60	23.....		5.25	5.05	4.60	4.60
9.....		4.80	4.75	4.60	4.60	24.....		5.22	5.00	4.60	4.60
10.....		4.70	4.75	4.60	4.60	25.....		5.25	4.95	4.60	4.62
11.....		4.60	4.75	4.60	4.60	26.....		5.25	4.95	4.60	4.62
12.....		4.60	4.75	4.60	4.60	27.....		5.25	4.90	4.60	4.62
13.....		4.80	4.70	4.58	4.60	28.....		5.22	4.90	4.60	4.62
14.....		4.85	4.70	4.55	4.60	29.....		5.22	4.85	4.60	4.62
15.....		4.90	4.70	4.55	4.60	30.....		5.15	4.85	4.60	4.62
						31.....		5.15		4.60	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	4.62	4.70	4.65	5.40	5.20	5.00	5.28	4.70	4.80	4.50	4.50	4.50
2.....	4.62	4.70	4.65	5.30	5.18	5.00	5.20	4.70	4.80	4.50	4.50	4.50
3.....	4.62	4.70	4.65	5.20	5.05	5.00	5.20	4.65	4.80	4.50	4.55	4.50
4.....	4.62	4.70	4.65	5.20	4.95	5.00	5.20	4.65	4.80	4.50	4.55	4.50
5.....	4.62	4.70	4.65	5.18	4.95	5.00	5.15	4.60	4.80	4.50	4.55	4.50
6.....	4.62	4.70	4.65	5.10	4.95	5.00	5.08	4.60	4.80	4.50	4.55	4.50
7.....	4.63	4.70	4.65	5.10	4.95	5.00	5.02	4.60	4.80	4.50	4.55	4.50
8.....	4.64	4.70	4.65	5.00	5.00	5.00	4.92	4.55	4.75	4.50	4.55	4.50
9.....	4.64	4.70	4.65	5.00	5.00	4.98	4.92	4.55	4.75	4.50	4.55	4.50
10.....	4.64	4.70	4.65	5.00	5.00	4.95	4.95	4.55	4.75	4.50	4.55	4.50
11.....	4.64	4.70	4.65	5.00	5.00	4.95	4.95	4.52	4.72	4.50	4.55	4.50
12.....	4.64	4.70	4.65	4.95	4.95	4.95	4.90	4.55	4.70	4.50	4.55	4.50
13.....	4.64	4.70	4.65	4.90	4.90	4.95	4.90	4.62	4.65	4.50	4.55	4.50
14.....	4.64	4.70	4.65	4.90	4.90	4.95	4.85	4.65	4.58	4.50	4.55	4.50
15.....	4.64	4.70	4.65	4.90	4.90	5.48	4.85	4.65	4.48	4.50	4.55	4.50
16.....	4.64	4.70	4.65	5.50	4.90	6.45	4.85	4.65	4.50	4.50	4.55	4.50
17.....	4.64	4.70	4.65	5.85	4.90	6.78	4.85	4.65	4.55	4.50	4.55	4.50
18.....	4.64	4.70	4.65	6.40	4.90	6.92	4.85	4.65	4.55	4.60	4.55	4.50
19.....	4.64	4.70	4.65	6.55	4.90	6.70	4.85	4.65	4.55	4.50	4.55	4.50
20.....	4.65	4.70	4.65	5.92	4.90	6.40	4.85	4.65	4.55	4.50	4.50	4.50
21.....	4.65	4.70	4.65	5.88	4.90	6.10	4.82	4.65	4.55	4.50	4.50	4.50
22.....	4.65	4.70	4.70	5.82	4.90	5.98	4.75	4.72	4.50	4.50	4.50	4.50
23.....	4.65	4.70	4.70	5.90	4.90	5.90	4.75	4.90	4.50	4.50	4.50	4.50
24.....	4.65	4.70	4.72	5.90	4.90	5.90	4.75	4.90	4.50	4.50	4.50	4.50
25.....	4.65	4.70	4.88	5.82	4.80	5.80	4.70	4.88	4.50	4.50	4.50	4.50
26.....	4.65	4.68	4.52	5.65	4.75	5.72	4.70	4.85	4.50	4.50	4.50	4.50
27.....	4.70	4.65	5.90	5.40	4.75	5.68	4.70	4.85	4.50	4.50	4.50	4.50
28.....	4.70	4.65	5.88	5.40	4.78	5.60	4.70	4.85	4.50	4.50	4.50	4.50
29.....	4.70	4.65	5.65	5.38	4.85	5.60	4.70	4.85	4.50	4.50	4.50	4.50
30.....	4.70	4.65	5.60	5.30		5.55	4.70	4.85	4.50	4.50	4.50	4.50
31.....	4.70		5.52	5.22		5.52		4.85		4.50	4.50	

Daily gage height, in feet, of Lost River at Olene, Oreg., for 1904, 1907-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	4.50	4.60	4.75	4.70	5.68	6.42	6.40	5.32	4.62	4.53	4.54	4.62
2.....	4.50	4.60	4.75	4.70	5.62	6.50	6.48	5.26	4.64	4.53	4.54	4.68
3.....	4.50	4.60	4.75	4.70	5.78	6.80	6.58	5.18	4.64	4.53	4.54	4.70
4.....	4.50	4.62	4.75	4.70	6.25	7.68	6.48	5.14	4.63	4.52	4.53	4.70
5.....	4.50	4.62	4.75	4.75	6.58	7.68	6.40	5.10	4.62	4.52	4.53	4.71
6.....	4.50	4.65	4.75	4.80	5.92	7.70	6.35	5.01	4.62	4.53	4.52	4.70
7.....	4.50	4.70	4.75	4.80	5.82	7.58	6.28	4.98	4.60	4.51	4.52	4.69
8.....	4.48	4.70	4.75	4.85	5.62	7.55	6.25	4.96	4.61	4.50	4.52	4.66
9.....	4.52	4.70	4.70	5.38	5.55	6.48	6.20	4.94	4.60	4.50	4.52	4.67
10.....	4.55	4.70	4.70	5.40	5.40	6.28	6.20	4.89	4.59	4.49	4.51	4.68
11.....	4.55	4.70	4.70	5.40	5.40	6.18	6.15	4.85	4.60	4.50	4.50	4.69
12.....	4.60	4.70	4.70	5.00	5.45	6.02	6.28	4.82	4.59	4.50	4.50	4.65
13.....	4.60	4.70	4.70	5.00	5.48	5.98	6.35	4.81	4.57	4.50	4.50	4.60
14.....	4.60	4.70	4.70	5.28	6.15	6.00	6.40	4.80	4.57	4.50	4.50	4.49
15.....	4.60	4.70	4.70	5.65	6.78	6.00	6.40	4.79	4.58	4.50	4.50	4.49
16.....	4.60	4.70	4.70	6.60	6.88	5.98	6.38	4.78	4.58	4.51	4.50	4.48
17.....	4.60	4.70	4.70	9.35	6.98	5.90	6.32	4.78	4.60	4.51	4.50	4.46
18.....	4.60	4.70	4.70	10.55	8.12	6.05	6.18	4.77	4.60	4.50	4.50	4.46
19.....	4.60	4.70	4.70	10.62	8.80	6.72	6.02	4.76	4.60	4.50	4.51	4.46
20.....	4.60	4.70	4.70	10.38	7.95	6.62	5.92	4.74	4.59	4.49	4.51	4.46
21.....	4.60	4.70	4.70	10.32	6.95	6.48	5.88	4.74	4.58	4.50	4.51	4.46
22.....	4.60	4.70	4.70	10.42	6.52	6.28	5.78	4.74	4.58	4.50	4.51	4.46
23.....	4.60	4.70	4.70	9.05	6.50	6.22	5.67	4.73	4.58	4.50	4.51	4.48
24.....	4.60	4.72	4.70	7.98	6.50	6.20	5.54	4.73	4.58	4.50	4.51	4.50
25.....	4.60	4.75	4.70	6.95	6.45	6.20	5.48	4.72	4.58	4.50	4.51	4.50
26.....	4.60	4.75	4.70	6.80	6.45	6.15	5.40	4.71	4.57	4.51	4.51	4.50
27.....	4.60	4.75	4.70	6.55	6.40	6.10	5.37	4.70	4.56	4.51	4.56	4.51
28.....	4.60	4.75	4.70	6.30	6.35	6.15	5.36	4.70	4.56	4.51	4.56	4.51
29.....	4.60	4.75	4.70	6.30	6.30	6.28	5.30	4.62	4.56	4.52	4.60	4.51
30.....	4.60	4.75	4.70	5.95	6.45	6.45	5.30	4.38	4.54	4.52	4.61	4.51
31.....	4.60	4.70	4.70	5.90	6.40	6.40	4.60	4.60	4.54	4.61	4.61	4.51
1909-10.												
1.....	4.51	4.51	5.32	4.52	5.15	7.04	5.16	4.57	4.50	4.45	4.45	4.47
2.....	4.51	4.51	5.30	4.50	5.10	9.06	5.14	4.57	4.49	4.44	4.45	4.47
3.....	4.52	4.52	5.30	4.48	5.00	9.73	5.11	4.58	4.49	4.44	4.45	4.47
4.....	4.52	4.51	5.25	4.46	4.88	9.38	5.18	4.59	4.49	4.44	4.45	4.47
5.....	4.53	4.50	5.25	4.45	4.70	8.46	5.18	4.60	4.48	4.44	4.42	4.47
6.....	4.54	4.50	5.15	4.44	4.60	7.66	5.04	4.62	4.48	4.44	4.35	4.47
7.....	4.55	4.50	4.90	4.42	4.62	7.12	4.88	4.66	4.48	4.44	4.35	4.47
8.....	4.55	4.50	4.82	4.42	4.66	6.77	4.93	4.69	4.48	4.44	4.35	4.47
9.....	4.55	4.50	4.80	4.41	4.64	6.53	4.90	4.68	4.48	4.44	4.37	4.47
10.....	4.56	4.50	4.74	4.40	4.64	6.46	4.87	4.66	4.48	4.42	4.38	4.47
11.....	4.56	4.50	4.70	4.40	4.65	6.42	4.84	4.64	4.48	4.42	4.40	4.47
12.....	4.56	4.50	4.72	4.40	4.64	6.40	4.82	4.64	4.48	4.42	4.40	4.48
13.....	4.56	4.50	4.72	4.40	4.68	6.38	4.80	4.60	4.48	4.42	4.40	4.53
14.....	4.56	4.50	4.72	4.40	4.89	6.50	4.77	4.46	4.48	4.42	4.40	4.59
15.....	4.56	4.50	4.72	4.40	5.06	6.50	4.74	4.44	4.48	4.42	4.41	4.58
16.....	4.56	4.50	4.72	4.40	5.01	6.44	4.74	4.43	4.48	4.42	4.43	4.56
17.....	4.56	4.50	4.70	4.40	4.92	6.34	4.72	4.50	4.48	4.42	4.44	4.52
18.....	4.56	4.53	4.69	4.40	5.01	6.28	4.70	4.51	4.48	4.42	4.44	4.52
19.....	4.56	4.54	4.69	4.39	5.06	6.22	4.68	4.51	4.48	4.42	4.44	4.52
20.....	4.55	4.57	4.69	4.39	5.02	6.30	4.66	4.51	4.48	4.42	4.44	4.52
21.....	4.55	4.57	4.69	4.52	5.05	6.29	4.65	4.51	4.48	4.42	4.44	4.52
22.....	4.55	6.18	4.69	4.59	5.02	6.10	4.63	4.51	4.48	4.42	4.44	4.52
23.....	4.54	7.33	4.69	4.88	4.95	5.94	4.61	4.51	4.47	4.42	4.45	4.51
24.....	4.53	7.86	4.68	5.48	5.31	6.02	4.60	4.42	4.47	4.43	4.47	4.51
25.....	4.53	8.76	4.68	6.85	6.04	6.04	4.60	4.46	4.47	4.44	4.47	4.51
26.....	4.52	6.76	4.60	5.95	6.11	5.88	4.59	4.50	4.47	4.44	4.47	4.51
27.....	4.52	6.25	4.56	5.80	6.11	5.73	4.58	4.52	4.46	4.44	4.47	4.51
28.....	4.51	5.70	4.55	5.52	6.22	5.58	4.57	4.52	4.45	4.44	4.47	4.51
29.....	4.51	5.58	4.54	5.38	5.42	5.42	4.56	4.52	4.44	4.45	4.47	4.50
30.....	4.51	5.40	4.53	5.31	5.28	5.28	4.58	4.52	4.44	4.45	4.47	4.50
31.....	4.51	4.52	4.52	5.24	5.21	5.21	4.52	4.52	4.40	4.47	4.47	4.50

Daily discharge, in second-feet, of Lost River at Olene, Oreg., for 1904, 1907-1910.

Day.	May.	June.	July.	Day.	May.	June.	July.	Day.	May.	June.	July.
1904.				1904.				1904.			
1.....		370	168	11.....		298	168	21.....			182
2.....		400	168	12.....		298	168	22.....			168
3.....		400	168	13.....		275	168	23.....			168
4.....		345	150	14.....		275	168	24.....		820	168
5.....		370	150	15.....		275	159	25.....		756	168
6.....		345	150	16.....		254	150	26.....		595	168
7.....		345	168	17.....		232	150	27.....		546	168
8.....		345	168	18.....		232	150	28.....		574	168
9.....		320	168	19.....		196	150	29.....		497	168
10.....		320	168	20.....		196	150	30.....		442	168
								31.....		418	150

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1907.						1907.					
1.....		318	172	106	116	16.....		248	142	96	116
2.....		318	172	106	116	17.....		248	142	96	116
3.....		318	172	106	116	18.....		240	142	96	116
4.....		318	172	106	116	19.....		343	270	142	96
5.....		293	172	106	116	20.....		343	270	142	96
6.....		270	157	106	116	21.....		343	270	142	116
7.....		106	157	106	116	22.....		343	270	116	116
8.....		172	157	106	116	23.....		370	270	116	116
9.....		172	157	116	116	24.....		354	248	116	116
10.....		142	157	116	116	25.....		370	228	116	121
11.....		116	157	116	116	26.....		370	228	116	121
12.....		116	157	116	116	27.....		370	208	116	121
13.....		172	142	112	116	28.....		354	208	116	121
14.....		190	142	106	116	29.....		354	190	116	121
15.....		208	142	106	116	30.....		318	190	116	121
						31.....		318	116	116	121

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.....	121	142	129	455	343	248	387	142	172	96	96	96
2.....	121	142	129	398	333	248	343	142	172	96	96	96
3.....	121	142	129	343	270	248	343	129	172	96	106	96
4.....	121	142	129	343	228	248	343	129	172	96	106	96
5.....	121	142	129	333	228	248	318	116	172	96	106	96
6.....	121	142	129	293	228	248	284	116	172	96	106	96
7.....	124	142	129	293	228	248	257	116	172	96	106	96
8.....	126	142	129	248	248	248	216	106	157	96	106	96
9.....	126	142	129	248	248	240	216	106	157	96	106	96
10.....	126	142	129	248	248	228	228	106	157	96	106	96
11.....	126	142	129	248	248	228	228	100	148	96	106	96
12.....	126	142	129	228	228	228	208	106	142	96	106	96
13.....	126	142	129	208	208	228	208	121	129	96	106	96
14.....	126	142	129	208	208	228	190	129	112	96	106	96
15.....	126	142	129	208	208	503	190	129	93	96	106	96
16.....	126	142	129	515	208	1,210	190	129	96	96	106	96
17.....	126	142	129	745	208	1,500	190	129	106	96	106	96
18.....	126	142	129	1,170	208	1,630	190	129	106	96	106	96
19.....	126	142	129	1,300	208	1,430	190	129	106	96	106	96
20.....	129	142	129	794	208	1,170	190	129	106	96	96	96
21.....	129	142	129	766	208	930	179	129	106	96	96	96
22.....	129	142	142	724	208	836	157	148	96	96	96	96
23.....	129	142	142	780	208	780	157	208	96	96	96	96
24.....	129	142	148	780	208	780	157	208	96	96	96	96
25.....	129	142	201	724	172	710	142	201	96	96	96	96
26.....	129	137	100	608	157	654	142	190	96	96	96	96
27.....	142	129	780	455	157	627	142	190	96	96	96	96
28.....	142	129	766	455	166	575	142	190	96	96	96	96
29.....	142	129	608	444	190	575	142	190	96	96	96	96
30.....	142	129	675	398	.....	545	142	190	96	96	96	96
31.....	142	.....	527	354	.....	527	.....	190	.....	96	96	.....

Daily discharge, in second-feet, of Lost River at Olene, Oreg., for 1904, 1907-1910—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	96	116	157	143	627	1,190	1,170	409	126	107	109	125
2.....	96	116	157	143	588	1,250	1,230	376	129	107	109	138
3.....	96	116	157	143	696	1,520	1,320	333	129	107	109	143
4.....	96	121	157	143	1,050	2,330	1,230	313	127	106	107	143
5.....	96	121	157	158	1,320	2,330	1,170	293	125	106	107	146
6.....	96	129	157	172	794	2,350	1,130	252	125	107	106	143
7.....	96	142	157	172	724	2,230	1,070	240	130	104	106	141
8.....	93	142	157	190	588	2,200	1,050	232	122	102	106	134
9.....	100	142	142	444	545	1,230	1,010	224	120	102	106	136
10.....	106	142	142	455	455	1,070	1,010	204	118	100	104	138
11.....	106	142	142	455	455	994	970	190	120	102	102	141
12.....	116	142	142	248	485	866	1,070	179	118	102	102	132
13.....	116	142	142	248	503	836	1,130	176	115	102	102	120
14.....	116	142	142	387	970	850	1,170	172	115	102	102	100
15.....	116	142	142	608	1,500	850	1,170	169	116	102	102	100
16.....	116	142	142	1,340	1,590	836	1,150	166	116	104	102	98
17.....	116	142	142	4,080	1,680	780	1,110	166	120	104	102	95
18.....	116	142	142	5,420	2,770	890	994	163	120	102	102	95
19.....	116	142	142	5,500	3,480	1,450	866	160	120	102	104	95
20.....	116	142	142	5,220	2,600	1,360	794	155	118	100	104	95
21.....	116	142	142	5,150	1,660	1,230	766	155	116	102	104	95
22.....	116	142	142	5,260	1,270	1,070	696	155	116	102	104	95
23.....	116	142	142	3,760	1,250	1,030	620	152	116	102	104	98
24.....	116	148	142	2,630	1,250	1,010	539	152	116	102	104	102
25.....	116	157	142	1,660	1,210	1,010	503	149	116	102	104	102
26.....	116	157	142	1,520	1,210	970	455	146	115	104	104	102
27.....	116	157	142	1,300	1,170	930	438	143	113	104	113	104
28.....	116	157	142	1,090	1,130	970	364	143	113	104	113	104
29.....	116	157	142	1,090	.....	1,070	398	125	113	106	120	104
30.....	116	157	142	815	.....	1,210	398	80	109	106	122	104
31.....	116	.....	142	780	.....	1,170	.....	120	.....	109	122	.....
1909-10.												
1.....	104	104	409	106	322	1,660	328	115	102	91	93	97
2.....	104	104	398	102	295	3,350	317	115	100	91	93	97
3.....	106	106	398	98	248	3,960	300	116	100	91	93	97
4.....	106	104	370	95	201	3,640	320	118	100	91	93	97
5.....	107	102	370	93	143	2,840	339	120	98	91	88	97
6.....	109	102	318	91	120	2,160	267	125	98	91	76	97
7.....	111	102	208	88	125	1,730	240	134	98	91	76	97
8.....	111	102	179	88	134	1,450	220	141	98	91	76	97
9.....	111	102	172	86	129	1,270	208	133	98	91	80	97
10.....	113	102	155	84	129	1,220	197	134	98	88	81	97
11.....	113	102	143	84	132	1,190	186	129	98	88	84	97
12.....	113	102	149	84	129	1,180	179	129	98	88	84	98
13.....	113	102	149	84	138	1,160	172	120	98	88	84	107
14.....	113	102	149	84	204	1,250	163	95	98	88	84	118
15.....	113	102	149	84	276	1,250	155	91	98	88	86	116
16.....	113	102	149	84	253	1,200	155	89	98	88	89	113
17.....	113	102	143	84	216	1,130	149	102	98	88	91	106
18.....	113	107	141	84	253	1,080	143	104	98	88	91	106
19.....	113	109	141	82	276	1,040	138	104	98	88	91	106
20.....	111	115	141	82	257	1,100	134	104	98	88	91	106
21.....	111	115	141	106	272	1,090	132	104	98	88	91	106
22.....	111	994	141	118	257	950	127	104	98	88	91	106
23.....	109	2,000	141	201	223	838	122	104	97	88	93	104
24.....	107	2,510	138	527	416	894	120	88	97	89	97	104
25.....	107	3,450	138	1,510	908	908	120	95	97	91	97	104
26.....	106	1,480	120	845	958	796	118	102	97	91	97	104
27.....	106	1,050	113	740	958	691	116	106	95	91	97	104
28.....	104	640	111	553	1,040	592	115	106	93	91	97	104
29.....	104	563	109	462	.....	488	113	106	91	93	97	102
30.....	104	455	107	416	.....	398	116	106	91	93	97	102
31.....	104	.....	106	374	.....	356	.....	106	.....	84	97	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1904, fairly well defined above 250 second-feet; 1907 to 1909, fairly well defined between 120 and 1,700 second-feet; 1910, fairly well defined between 100 and 2,500 second-feet.

Monthly discharge of Lost River at Olene, Oreg. for 1904, 1907-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
May 24-31.....	820	418	581	9,220	B.
June.....	400	168	260	15,500	B.
July.....	168	150	157	9,650	C.
1907.					
May 19-31.....	370	318	350	9,020	B.
June.....	318	116	227	13,500	B.
July.....	172	116	142	8,730	B.
August.....	116	96	109	6,700	B.
September.....	121	116	117	6,960	B.
The period.....				44,900	
1907-8.					
October.....	142	121	128	7,870	B.
November.....	142	129	140	8,330	B.
December.....	780	100	216	13,300	B.
January.....	1,300	208	494	30,400	B.
February.....	343	157	221	12,700	B.
March.....	1,630	228	592	36,400	B.
April.....	387	142	214	12,700	B.
May.....	208	100	144	8,850	B.
June.....	172	93	126	7,500	B.
July.....	96	96	96	5,900	B.
August.....	106	96	101	6,210	B.
September.....	96	96	96	5,710	B.
The year.....	1,630	93	214	156,000	
1908-9.					
October.....	116	93	110	6,760	B.
November.....	157	116	141	8,390	B.
December.....	157	142	146	8,980	B.
January.....	5,500	143	1,640	101,000	A.
February.....	3,480	455	1,200	66,600	A.
March.....	2,350	780	1,260	77,500	A.
April.....	1,320	364	900	53,600	B.
May.....	409	80	197	12,100	B.
June.....	129	102	119	7,080	B.
July.....	109	102	104	6,400	B.
August.....	122	102	107	6,580	B.
September.....	146	95	116	6,900	B.
The year.....	5,500	93	503	362,000	
1909-10.					
October.....	113	104	109	6,700	B.
November.....	3,450	102	511	30,400	B.
December.....	409	106	187	11,500	B.
January.....	1,510	82	246	15,100	B.
February.....	1,040	120	322	17,900	B.
March.....	3,960	356	1,380	84,800	B.
April.....	339	113	184	10,900	B.
May.....	141	88	111	6,820	B.
June.....	102	91	97.5	5,800	B.
July.....	93	84	89.5	5,500	B.
August.....	97	76	89.5	5,500	B.
September.....	118	97	103	6,130	B.
The year.....	3,960	76	286	207,000	

LOST RIVER NEAR MERRILL, OREG.

Location.—About sec. 28, T. 40 S., R. 10 E., 4 miles northwest of Merrill, 7 miles above junction with Tule Lake.

Records presented.—July 26, 1904, to February 23, 1909.

Drainage area.—1,420 square miles.

Gage.—Vertical staff.

Channel.—Clay, rock, and gravel; at times obstructed by aquatic growth.

Discharge measurements.—Made by wading or from a cable.

Accuracy.—Results fair. Discharge relation affected by backwater from Tule Lake during periods of high water in the lake.

Discharge measurements of Lost River near Merrill, Oreg., in 1904-1908.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
1904.				1906.			
Sept. 6	T. H. Humphreys	3.55	159	Apr. 26	C. T. Darley	6.50	1,110
26	C. T. Darley	3.50	163	30	L. F. Hendricks	5.90	1,010
Oct. 20	T. H. Humphreys	3.50	145	May 5	do	4.80	563
Nov. 5	C. T. Darley	3.40	147	29	do	4.10	237
27	do	3.48	158	June 19	do	3.98	217
Dec. 17	do	3.45	147	Sept. 10	do	3.50	87
1905.				1907.			
Jan. 18	C. T. Darley	3.50	131	Feb. 4	Hendricks and Stickssel.	12.25	3,500
Feb. 1	do	4.80	566	4	do	12.75	3,950
8	do	5.05	658	7	J. Stickssel.	16.90	7,430
27	do	4.55	533	8	do	16.50	7,240
Mar. 5	do	4.63	540	9	do	15.00	5,520
Apr. 5	do	6.77	1,130	9	do	14.67	4,930
14	do	4.00	284	26	L. F. Hendricks	7.35	1,420
29	do	3.50	145	Mar. 4	do	6.50	1,080
May 12	do	3.50	130	19	do	13.60	3,970
June 14	do	3.41	117	20	do	14.35	4,750
July 23	do	3.45	117	21	do	15.65	5,450
Aug. 15	Clapp and Darley	3.41	103	21	do	15.90	5,550
26	C. T. Darley	3.31	102	22	do	16.05	5,470
Sept. 15	do	3.32	101	23	do	15.10	4,980
1906.				23	do	14.88	4,730
Feb. 27	C. T. Darley	4.30	535	25	do	11.60	3,000
Mar. 25	do	10.75	2,620	26	do	11.10	2,690
27	R. Hubbard	12.08	3,470	27	do	10.60	2,470
27	do	12.22	3,570	Apr. 8	do	11.00	2,620
28	do	12.17	3,760	17	do	8.65	1,530
28	do	12.06	3,530	18	do	8.40	1,460
28	do	12.02	3,570	22	do	7.50	1,040
29	do	11.62	3,510	May 11	Stevens and Ellsworth.	6.36	371
29	do	11.34	3,320	18	do	6.38	340
30	do	11.04	3,080	June 12	C. E. Ellsworth	6.15	189
Apr. 1	do	13.05	4,090	26	do	6.10	228
1	do	13.18	4,190	July 2	do	6.05	255
2	do	13.65	4,270	1908.			
2	do	13.66	4,560	Mar. 17	C. E. Ellsworth	7.27	1,280
10	C. T. Darley	13.02	3,940	Apr. 9	do	5.05	200
13	do	11.92	3,160	May 4	Ellsworth and Kimble.	4.82	139
14	do	11.23	2,850	Aug. 21	H. Kimble	3.65	124
18	do	9.80	2,360	Sept. 23	do	3.55	118
19	do	9.26	2,110	Oct. 2	do	3.55	108
20	L. F. Hendricks	8.32	1,320	9	do	3.55	108
25	C. T. Darley	6.60	1,160	Nov. 27	McGlashan and Kimble.	3.48	117

Daily gage height, in feet, of Lost River near Merrill, Oreg., for 1904-1909.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1904.				1904.				1904.			
1		3.7	3.6	11		3.7	3.55	21		3.7	3.55
2		3.7	3.6	12		3.7	3.55	22		3.7	3.55
3		3.7	3.6	13		3.7	3.55	23		3.7	3.55
4		3.7	3.6	14		3.7	3.55	24		3.7	3.55
5		3.7	3.6	15		3.7	3.55	25		3.7	3.55
6		3.7	3.55	16		3.7	3.55	26	3.7	3.7	3.55
7		3.7	3.55	17		3.7	3.55	27	3.7	3.7	3.55
8		3.7	3.55	18		3.7	3.55	28	3.7	3.7	3.55
9		3.7	3.55	19		3.7	3.55	29	3.7	3.7	3.55
10		3.7	3.55	20		3.7	3.55	30	3.7	3.7	3.55
								31	3.7	3.7	3.6

Daily gage height, in feet, of Lost River near Merrill, Oreg., for 1904-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	3.55	3.5	3.5	3.5	4.7	4.5	4.8	3.5	3.5	3.4	3.4	3.3
2.....	3.55	3.5	3.5	3.5	5.7	4.5	4.8	3.5	3.5	3.4	3.4	3.3
3.....	3.55	3.5	3.5	3.5	6.3	4.5	6.0	3.5	3.5	3.4	3.4	3.3
4.....	3.55	3.5	3.5	3.5	6.8	4.5	7.0	3.5	3.5	3.4	4.4	3.3
5.....	3.55	3.5	3.5	3.5	7.0	4.6	6.8	3.5	3.5	3.4	3.4	3.3
6.....	3.55	3.5	3.5	3.5	6.2	4.6	6.0	3.5	3.5	3.4	3.4	3.3
7.....	3.55	3.5	3.5	3.5	5.6	4.6	5.3	3.5	3.5	3.4	3.4	3.3
8.....	3.55	3.5	3.5	3.5	5.1	4.55	5.4	3.5	3.5	3.4	3.4	3.3
9.....	3.55	3.5	3.5	3.5	4.7	4.55	5.6	3.5	3.5	3.4	4.4	3.3
10.....	3.55	3.5	3.5	3.5	4.4	4.4	5.8	3.5	3.5	3.4	3.4	3.3
11.....	3.55	3.5	3.5	3.5	4.2	4.3	5.9	3.5	3.5	3.4	3.4	3.3
12.....	3.55	3.5	3.5	3.5	4.0	4.35	4.0	3.5	3.55	3.4	3.4	3.3
13.....	3.55	3.5	3.5	3.5	3.9	4.2	4.0	3.5	3.55	3.4	3.4	3.3
14.....	3.55	3.5	3.5	3.5	3.8	4.2	4.0	3.5	3.55	3.4	3.4	3.3
15.....	3.55	3.5	3.5	3.5	3.8	4.2	4.0	3.5	3.4	3.4	3.4	3.3
16.....	3.55	3.5	3.5	3.5	3.7	4.1	3.9	3.3	3.4	3.4	3.4	3.3
17.....	3.55	3.5	3.5	3.5	3.7	4.1	3.9	3.5	3.4	3.4	3.4	3.3
18.....	3.55	3.5	3.5	3.5	3.7	4.1	3.8	3.5	3.4	3.4	3.4	3.3
19.....	3.5	3.5	3.5	3.5	3.7	4.1	3.8	3.5	3.4	3.4	3.4	3.3
20.....	3.5	3.5	3.5	3.5	3.8	4.2	3.8	3.5	3.4	3.4	3.4	3.3
21.....	3.5	3.5	3.5	3.5	3.8	4.4	3.7	3.5	3.4	3.4	3.4	3.3
22.....	3.5	3.5	3.5	3.5	3.9	4.5	3.7	3.5	3.4	3.4	3.4	3.3
23.....	3.5	3.5	3.5	3.5	4.4	4.6	3.7	3.5	3.4	3.4	3.4	3.3
24.....	3.5	3.5	3.5	3.5	4.4	4.7	3.6	3.5	3.4	3.4	3.4	3.3
25.....	3.5	3.5	3.5	4.5	4.5	4.9	3.6	3.5	3.4	3.4	3.4	3.3
26.....	3.5	3.5	3.5	5.4	4.5	4.6	3.5	3.5	3.4	3.4	3.4	3.3
27.....	3.5	3.5	3.5	5.3	4.55	4.6	3.5	3.5	3.4	3.4	3.4	3.3
28.....	3.5	3.5	3.5	5.0	4.55	5.0	3.5	3.5	3.4	3.4	3.4	3.3
29.....	3.5	3.5	3.5	4.7	-----	4.9	3.5	3.5	3.4	3.4	3.4	3.3
30.....	3.5	3.5	3.5	4.5	-----	4.8	3.5	3.5	3.4	3.4	3.4	3.3
31.....	3.5	-----	3.5	4.4	-----	4.8	-----	3.5	-----	3.4	-----	-----
1905-6.												
1.....	3.3	3.3	3.3	3.3	3.3	4.55	12.9	5.6	4.45	3.7	3.55	3.5
2.....	3.3	3.3	3.3	3.3	3.3	5.2	13.6	5.3	4.45	3.7	3.55	3.5
3.....	3.3	3.3	3.3	3.3	3.3	5.0	12.7	5.05	4.5	3.7	3.55	3.5
4.....	3.3	3.3	3.3	3.3	-----	4.6	11.5	5.0	4.3	3.7	3.55	3.5
5.....	3.3	3.3	3.3	3.3	-----	4.35	10.6	4.85	4.3	3.7	3.55	3.5
6.....	3.3	3.3	3.3	3.3	-----	4.2	10.45	4.65	4.25	3.7	3.55	3.5
7.....	3.3	3.3	3.3	3.3	3.4	4.1	11.0	4.6	4.2	3.7	3.5	3.5
8.....	3.3	3.3	3.3	3.3	3.4	4.1	11.75	4.6	4.3	3.65	3.5	3.5
9.....	3.3	3.3	3.3	3.3	3.4	4.65	12.4	4.5	4.3	3.65	3.5	3.5
10.....	3.3	3.3	3.3	3.3	3.4	5.8	13.0	4.45	4.3	3.6	3.5	3.5
11.....	3.3	3.3	3.3	3.3	3.4	6.3	13.5	4.35	4.4	3.6	3.5	3.5
12.....	3.3	3.3	3.3	3.3	3.4	6.7	13.05	4.25	4.15	3.7	3.5	3.5
13.....	3.3	3.3	3.3	3.3	3.4	5.85	12.1	4.2	4.15	3.7	3.55	3.5
14.....	3.3	3.3	3.3	3.3	3.45	5.5	11.2	4.3	4.1	3.6	3.55	3.5
15.....	3.3	3.3	3.3	3.3	3.45	5.9	10.55	4.2	4.2	3.6	3.55	3.5
16.....	3.3	3.3	3.3	3.3	3.5	5.2	10.1	4.15	4.2	3.6	3.5	3.5
17.....	3.3	3.3	3.3	3.3	3.5	4.9	9.95	4.2	4.0	3.6	3.55	3.5
18.....	3.3	3.3	3.3	3.3	3.6	4.5	9.9	4.25	3.9	3.6	3.55	3.5
19.....	3.3	3.3	3.3	3.3	3.8	4.4	9.25	4.15	3.95	3.6	3.55	3.5
20.....	3.3	3.3	3.3	3.3	4.0	4.35	8.45	4.05	3.85	3.6	3.55	3.5
21.....	3.3	3.3	3.3	3.3	4.45	4.45	7.95	4.1	3.85	3.6	3.55	3.5
22.....	3.3	3.3	3.3	3.3	5.15	4.75	7.4	4.05	3.8	3.6	3.5	3.5
23.....	3.3	3.3	3.3	3.3	5.2	5.5	7.1	4.1	3.85	3.6	3.5	3.5
24.....	3.3	3.3	3.3	3.3	5.3	8.9	6.85	4.0	3.85	3.65	3.55	3.5
25.....	3.3	3.3	3.3	3.3	4.9	10.8	6.6	4.2	3.8	3.65	3.55	3.5
26.....	3.3	3.3	3.3	3.3	4.5	11.4	6.5	4.1	3.8	3.65	3.55	3.5
27.....	3.3	3.3	3.3	3.3	4.3	12.1	6.5	4.05	3.8	3.65	3.55	3.5
28.....	3.3	3.3	3.3	3.3	4.3	12.1	6.25	4.05	3.8	3.65	3.55	3.5
29.....	3.3	3.3	3.3	3.3	-----	11.5	5.85	4.1	3.7	3.65	3.5	3.5
30.....	3.3	3.3	3.3	3.3	-----	11.05	5.9	4.15	3.7	3.65	3.5	3.5
31.....	3.3	-----	3.3	3.3	-----	11.5	-----	4.25	-----	3.65	3.5	-----

Daily gage height, in feet, of Lost River near Merrill, Oreg., for 1904-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	3.5	3.4	3.4	4.48	5.7	7.75	11.55	6.7	6.1	6.1	5.5	5.0
2.....	3.5	3.4	3.4	4.2	7.9	7.4	12.45	6.6	6.2	6.1	5.4	5.0
3.....	3.5	3.4	3.4	4.15	8.7	6.9	12.1	6.5	6.2	5.9	5.4	5.0
4.....	3.5	3.4	3.4	4.0	12.4	6.7	11.5	6.5	6.2	5.9	5.4	5.0
5.....	3.5	3.4	3.4	3.9	15.8	6.6	11.1	6.4	6.3	5.9	5.4	5.0
6.....	3.5	3.4	3.4	3.8	18.1	6.75	11.55	6.5	6.4	5.8	5.4	5.0
7.....	3.5	3.4	3.4	3.8	18.25	7.1	10.52	6.5	6.2	5.8	5.4	5.0
8.....	3.5	3.4	3.4	3.75	16.85	7.1	10.95	6.5	6.2	5.9	5.4	5.0
9.....	3.5	3.4	3.4	3.7	14.55	7.0	12.1	6.5	6.2	5.8	5.4	5.0
10.....	3.5	3.4	3.4	3.65	11.55	7.65	12.25	6.3	6.3	5.8	5.3	5.0
11.....	3.5	3.4	3.4	3.6	9.35	7.85	10.95	6.4	6.45	5.8	5.3	5.0
12.....	3.5	3.4	3.45	3.6	8.35	7.5	10.1	6.2	6.3	5.8	5.3	5.0
13.....	3.5	3.4	3.45	3.5	7.9	6.9	9.72	6.3	6.3	5.7	5.3	5.0
14.....	3.5	3.4	3.45	3.5	7.4	6.75	9.5	6.4	6.0	5.7	5.3	5.0
15.....	3.5	3.4	3.45	3.55	7.1	6.55	9.15	6.4	6.0	5.8	5.2	5.0
16.....	3.5	3.4	3.45	3.6	6.8	6.35	8.82	6.45	6.15	5.7	5.2	5.0
17.....	3.5	3.4	3.45	3.5	6.55	6.4	8.62	6.4	6.2	5.7	5.2	5.0
18.....	3.5	3.4	3.45	3.5	6.45	7.05	8.38	6.4	6.2	5.7	5.2	5.0
19.....	3.5	3.4	3.45	3.5	6.5	9.9	8.22	6.3	6.45	5.6	5.2	4.9
20.....	3.5	3.4	3.45	3.45	6.7	13.75	8.0	6.3	6.15	5.7	5.2	4.9
21.....	3.5	3.4	3.45	3.45	6.65	15.8	7.85	6.2	6.0	5.6	5.1	4.85
22.....	3.5	3.4	3.45	3.45	6.7	16.0	7.65	6.25	6.1	5.7	5.1	4.85
23.....	3.5	3.4	3.45	3.45	6.8	14.95	7.45	6.3	6.1	5.6	5.1	4.85
24.....	3.5	3.4	3.45	3.45	8.35	13.3	7.3	6.3	6.1	5.6	5.1	4.8
25.....	3.5	3.4	3.5	3.45	8.6	11.85	7.2	6.3	6.1	5.6	5.1	4.8
26.....	3.5	3.4	3.5	3.45	7.7	11.05	7.1	6.3	6.1	5.5	5.1	4.8
27.....	3.5	3.4	3.65	3.4	7.65	10.6	6.95	6.2	6.1	5.5	5.1	4.8
28.....	3.5	3.4	4.85	3.4	8.05	10.25	6.85	6.2	6.0	5.6	5.1	4.8
29.....	3.5	3.4	5.6	3.45	.....	9.95	6.8	6.3	6.0	5.5	5.0	4.8
30.....	3.5	3.4	5.2	3.45	.....	9.8	6.7	6.25	6.1	5.5	5.0	4.8
31.....	3.5	.....	4.8	3.65	.....	10.4	.....	6.2	.....	5.5	5.0	.....
1907-8.												
1.....	4.7	4.7	4.6	5.2	5.1	5.0	5.3	5.0	4.6	4.2	3.9	3.6
2.....	4.7	4.7	4.6	5.1	5.0	5.0	5.3	4.9	4.4	4.2	3.8	3.6
3.....	4.7	4.7	4.6	5.0	5.0	5.0	5.2	4.7	4.4	4.2	3.8	3.6
4.....	4.7	4.7	4.6	5.0	5.0	5.0	5.2	4.8	4.5	4.2	3.8	3.6
5.....	4.7	4.7	4.6	5.0	5.0	5.0	5.2	4.8	4.5	4.2	3.8	3.6
6.....	4.7	4.7	4.6	5.0	5.0	5.0	5.1	4.8	4.5	4.2	3.8	3.6
7.....	4.7	4.7	4.6	4.9	5.0	5.0	5.0	4.8	4.5	4.2	3.8	3.6
8.....	4.7	4.7	4.6	4.9	5.0	5.0	5.0	4.7	4.5	4.1	3.8	3.6
9.....	4.7	4.7	4.6	4.9	5.0	5.0	5.0	4.7	4.5	4.1	3.8	3.6
10.....	4.7	4.6	4.6	4.9	5.0	5.0	5.0	4.65	4.5	4.1	3.8	3.6
11.....	4.7	4.6	4.6	4.9	4.8	5.0	5.0	4.6	4.5	4.0	3.8	3.6
12.....	4.7	4.6	4.6	4.9	4.9	5.0	5.0	4.7	4.5	4.1	3.8	3.6
13.....	4.7	4.6	4.6	4.9	4.9	5.0	5.0	4.7	4.5	4.1	3.7	3.6
14.....	4.7	4.6	4.6	4.8	4.9	5.0	5.0	4.7	4.5	4.2	3.7	3.6
15.....	4.7	4.6	4.6	4.8	4.9	5.1	5.0	4.7	4.5	3.9	3.7	3.6
16.....	4.7	4.6	4.6	4.9	4.9	5.8	5.1	4.7	4.5	4.0	3.7	3.6
17.....	4.7	4.6	4.6	5.45	4.9	7.4	5.1	4.8	4.4	4.0	3.7	3.6
18.....	4.7	4.6	4.6	6.0	4.9	7.7	5.1	5.0	4.3	4.0	3.7	3.6
19.....	4.7	4.6	4.6	6.2	4.9	7.5	5.0	4.9	4.3	4.0	3.7	3.6
20.....	4.7	4.6	4.6	6.1	4.9	6.9	5.0	4.9	4.4	3.9	3.7	3.6
21.....	4.7	4.6	4.6	5.9	4.9	6.5	5.0	4.7	4.3	3.9	3.7	3.6
22.....	4.7	4.6	4.7	5.7	4.9	6.2	4.9	4.8	4.3	3.9	3.7	3.6
23.....	4.7	4.6	4.7	5.7	4.9	6.0	4.9	4.8	4.3	3.9	3.7	3.6
24.....	4.7	4.6	4.7	5.7	4.9	6.0	4.9	4.8	4.3	3.9	3.7	3.6
25.....	4.7	4.6	4.7	5.6	4.9	5.8	4.8	4.8	4.3	3.9	3.7	3.6
26.....	4.7	4.6	4.7	5.5	4.9	5.6	4.8	4.7	4.3	3.9	3.7	3.6
27.....	4.7	4.6	5.7	5.3	4.9	5.5	4.7	4.7	4.2	3.9	3.7	3.6
28.....	4.7	4.6	5.75	5.2	4.9	5.5	4.8	4.8	4.2	3.8	3.6	3.6
29.....	4.7	4.6	5.6	5.2	5.2	5.5	4.8	4.7	4.3	3.8	3.6	3.6
30.....	4.7	4.6	5.4	5.1	.....	5.4	4.9	4.6	4.3	3.8	3.6	3.6
31.....	4.7	.....	5.3	5.1	.....	5.3	.....	4.6	.....	3.9	3.6	.....

Daily gage height, in feet, of Lost River near Merrill, Oreg., for 1904-1909—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Day.	Oct.	Nov.	Dec.	Jan.	Feb.
1908-9.						1908-9.					
1.....	3.6	3.5	3.5	3.5	5.0	16.....	3.5	3.5	3.5	4.8	7.1
2.....	3.6	3.5	3.5	3.5	4.8	17.....	3.6	3.5	3.5	9.85	7.1
3.....	3.5	3.5	3.5	3.5	4.8	18.....	3.5	3.5	3.5	13.2	9.85
4.....	3.5	3.5	3.5	3.5	5.4	19.....	3.5	3.5	3.5	14.45	11.2
5.....	3.5	3.5	3.5	3.5	6.5	20.....	3.5	3.5	3.5	14.3	10.6
6.....	3.5	3.5	3.5	3.5	6.1	21.....	3.5	3.5	3.5	13.6	8.5
7.....	3.5	3.5	3.5	3.5	5.0	22.....	3.5	3.5	3.5	13.3	6.7
8.....	3.5	3.5	3.5	3.6	4.8	23.....	3.5	3.5	3.5	13.1	6.5
9.....	3.5	3.5	3.5	3.8	4.7	24.....	3.5	3.5	3.5	10.0	6.7
10.....	3.5	3.5	3.5	4.2	4.7	25.....	3.5	3.5	3.5	8.8	6.7
11.....	3.5	3.5	3.5	4.0	4.5	26.....	3.5	3.5	3.5	7.6	6.4
12.....	3.5	3.5	3.5	4.2	4.5	27.....	3.5	3.5	3.5	6.9	6.4
13.....	3.5	3.5	3.5	3.9	4.5	28.....	3.5	3.5	3.5	6.1	6.2
14.....	3.5	3.5	3.5	3.8	5.0	29.....	3.5	3.5	3.5	5.6	.....
15.....	3.6	3.5	3.5	3.8	6.2	30.....	3.5	3.5	3.5	5.2	.....
						31.....	3.5	.....	3.5	5.0	.....

Daily discharge, in second-feet, of Lost River near Merrill, Oreg., for 1904-1907.

Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.	Day.	July.	Aug.	Sept.
1904.				1904.				1904.			
1.....		203	176	11.....		203	163	21.....		203	163
2.....		203	176	12.....		203	163	22.....		203	163
3.....		203	176	13.....		203	163	23.....		203	163
4.....		203	176	14.....		203	163	24.....		203	163
5.....		203	176	15.....		203	163	25.....		203	163
6.....		203	163	16.....		203	163	26.....	203	203	163
7.....		203	163	17.....		203	163	27.....	203	176	163
8.....		203	163	18.....		203	163	28.....	203	176	163
9.....		203	163	19.....		203	163	29.....	203	176	163
10.....		203	163	20.....		203	163	30.....	203	176	163
								31.....	203	176	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	163	150	150	150	537	467	572	150	150	125	125	102
2.....	163	150	150	150	887	467	572	150	150	125	125	102
3.....	163	150	150	150	1,100	467	992	150	150	125	125	102
4.....	163	150	150	150	1,270	467	1,340	150	150	125	125	102
5.....	163	150	150	150	1,340	502	1,270	150	150	125	125	102
6.....	163	150	150	150	1,060	502	992	150	150	125	125	102
7.....	163	150	150	150	852	502	747	150	150	125	125	102
8.....	163	150	150	150	677	484	782	150	150	125	125	102
9.....	163	150	150	150	537	484	852	150	150	125	125	102
10.....	163	150	150	150	432	432	922	150	150	125	125	102
11.....	163	150	150	150	362	397	957	150	150	125	125	102
12.....	163	150	150	150	294	414	294	150	163	125	125	102
13.....	163	150	150	150	262	362	294	150	163	125	125	102
14.....	163	150	150	150	232	362	294	150	163	125	125	102
15.....	163	150	150	150	232	368	294	150	125	125	125	102
16.....	163	150	150	150	203	328	262	150	125	125	125	102
17.....	163	150	150	150	203	328	262	150	125	125	125	102
18.....	163	150	150	150	203	328	232	150	125	125	125	102
19.....	150	150	150	150	203	328	232	150	125	125	125	102
20.....	150	150	150	150	232	362	232	150	125	125	125	102
21.....	150	150	150	150	232	432	203	150	125	125	125	102
22.....	150	150	150	150	262	467	203	150	125	125	125	102
23.....	150	150	150	150	432	502	203	150	125	125	125	102
24.....	150	150	150	150	432	537	176	150	125	125	125	102
25.....	150	150	150	467	467	607	176	150	125	125	125	102
26.....	150	150	150	782	467	502	150	150	125	125	125	102
27.....	150	150	150	747	484	502	150	150	125	125	125	102
28.....	150	150	150	642	484	642	150	150	125	125	125	102
29.....	150	150	150	537	.....	607	150	150	125	125	125	102
30.....	150	150	150	467	.....	572	150	150	125	125	125	102
31.....	150	.....	150	432	.....	572	.....	150	125	125	.....	.....

Daily discharge, in second-feet, of Lost River near Merrill, Oreg., for 1904-1907—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6												
1	102	102	102	102	102	484	3,940	852	358	131	98	87
2	102	102	102	102	102	712	4,380	747	358	131	98	87
3	102	102	102	102	102	642	3,830	660	375	131	98	87
4	102	102	102	102	102	502	3,180	642	310	131	98	87
5	102	102	102	102	102	414	2,750	590	310	131	98	87
6	102	102	102	102	125	362	2,680	520	294	131	98	87
7	102	102	102	102	125	328	2,930	502	278	131	87	87
8	102	102	102	102	125	328	3,300	502	310	120	87	87
9	102	102	102	102	125	520	3,660	467	310	120	87	87
10	102	102	102	102	125	922	4,000	450	310	108	87	87
11	102	102	102	102	125	1,100	4,320	414	342	108	87	87
12	102	102	102	102	125	1,240	4,030	380	262	131	87	87
13	102	102	102	102	125	940	3,500	362	262	131	98	87
14	102	102	102	102	138	817	3,030	397	246	108	98	87
15	102	102	102	102	138	957	2,730	362	278	108	98	87
16	102	102	102	102	150	712	2,520	345	278	108	87	87
17	102	102	102	102	150	607	2,460	362	215	108	98	87
18	102	102	102	102	176	467	2,440	294	185	108	98	87
19	102	102	102	102	232	432	2,180	262	200	108	98	87
20	102	102	102	102	294	414	1,880	230	171	108	98	87
21	102	102	102	102	450	450	1,690	246	171	108	98	87
22	102	102	102	102	694	554	1,490	230	157	108	87	87
23	102	102	102	102	712	817	1,380	246	171	108	87	87
24	102	102	102	102	747	2,040	1,290	215	171	98	98	87
25	102	102	102	102	607	2,840	1,200	278	157	98	98	87
26	102	102	102	102	467	3,130	1,170	246	157	98	98	87
27	102	102	102	102	397	3,500	1,170	230	157	98	98	87
28	102	102	102	102	397	3,500	1,080	230	157	98	98	87
29	102	102	102	102	3,180	940	940	246	131	98	87	87
30	102	102	102	102	2,960	957	957	262	131	98	87	87
31	102	102	102	102	3,180	3,180	3,180	294	98	87	87	87
1906-7												
1	87	66	66	444	824	1,490	2,800	600	.....	.....	.....	.....
2	87	66	66	360	1,560	1,380	3,260	540	.....	.....	.....	.....
3	87	66	66	345	1,870	1,180	3,080	495	.....	.....	.....	.....
4	87	66	66	300	3,680	1,110	2,770	480	.....	.....	.....	.....
5	87	66	66	270	6,300	1,080	2,570	435	.....	.....	.....	.....
6	87	66	66	240	9,000	1,110	2,800	450	.....	.....	.....	.....
7	87	66	66	240	9,200	1,210	2,290	450	.....	.....	.....	.....
8	87	66	66	225	7,250	1,210	2,500	420	.....	.....	.....	.....
9	87	66	66	210	5,160	1,140	3,080	420	.....	.....	.....	.....
10	87	66	66	195	3,210	1,340	3,160	360	.....	.....	.....	.....
11	87	66	66	180	2,140	1,410	2,470	360	.....	.....	.....	.....
12	87	66	76	180	1,740	1,280	2,120	300	.....	.....	.....	.....
13	87	66	76	150	1,560	1,080	1,950	330	.....	.....	.....	.....
14	87	66	76	150	1,380	984	1,830	360	.....	.....	.....	.....
15	87	66	76	165	1,280	920	1,700	360	.....	.....	.....	.....
16	87	66	76	180	1,180	856	1,560	360	.....	.....	.....	.....
17	87	66	76	150	1,100	856	1,450	330	.....	.....	.....	.....
18	87	66	76	150	1,060	1,050	1,380	330	.....	.....	.....	.....
19	87	66	76	150	1,080	2,080	1,310	300	.....	.....	.....	.....
20	87	66	76	135	1,140	4,030	1,210	300	.....	.....	.....	.....
21	87	66	76	135	1,130	5,620	1,140	270	.....	.....	.....	.....
22	87	66	76	135	1,140	5,780	1,080	270	.....	.....	.....	.....
23	87	66	76	135	1,180	4,870	984	300	.....	.....	.....	.....
24	87	66	76	135	1,140	3,740	920	300	.....	.....	.....	.....
25	87	66	87	135	1,830	2,970	872	285	.....	.....	.....	.....
26	87	66	87	135	1,490	2,570	824	270	.....	.....	.....	.....
27	87	66	120	120	1,470	2,330	760	240	.....	.....	.....	.....
28	87	66	494	120	1,620	2,160	696	240	.....	.....	.....	.....
29	87	66	755	155	.....	2,050	664	270	.....	.....	.....	.....
30	87	66	615	135	.....	1,990	600	255	.....	.....	.....	.....
31	87	.....	477	195	.....	2,250	.....	240	.....	.....	.....	.....

NOTE.—Daily discharges determined as follows: From two fairly well defined rating curves applicable July 16, 1904, to May 17, 1906, and May 18 to Dec. 31, 1906; 1907, by indirect method for shifting channel. Discharge not computed after May 31, 1907, as records at Olene are almost directly comparable with those at Merrill and are much more reliable.

Monthly discharge of Lost River near Merrill, Oreg., for 1904-1907.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
July 26-31.....	203	203	203	2,415	B.
August.....	203	176	199	12,240	B.
September.....	176	163	165	9,818	B.
1904-5.					
October.....	163	150	158	9,715	B.
November.....	150	150	150	8,926	B.
December.....	150	150	150	9,223	B.
January.....	782	150	248	15,250	B.
February.....	1,342	203	514	28,550	B.
March.....	642	328	461	28,350	B.
April.....	1,342	150	470	27,970	B.
May.....	150	150	150	9,223	B.
June.....	163	125	138	8,212	B.
July.....	125	125	125	7,686	B.
August.....	125	125	125	7,686	B.
September.....	102	102	102	6,069	B.
The year.....	1,342	102	233	167,000	
1905-6.					
October.....	102	102	102	6,272	B.
November.....	102	102	102	6,069	B.
December.....	102	102	102	6,272	B.
January.....	102	102	102	6,270	B.
February.....	747	102	259	14,400	B.
March.....	3,500	328	1,260	77,500	B.
April.....	4,380	940	2,540	151,000	B.
May.....	852	215	386	23,700	B.
June.....	375	131	240	14,300	B.
July.....	131	98	113	6,950	B.
August.....	98	87	93.7	5,760	B.
September.....	87	87	87.0	5,180	B.
The year.....	4,380	87	449	324,000	
1906-7.					
October.....	87	87	87	5,350	B.
November.....	66	66	66	3,930	B.
December.....	755	66	140	8,610	B.
January.....	444	120	191	11,700	C.
February.....	9,200	824	2,600	144,000	B.
March.....	5,780	856	2,040	123,000	B.
April.....	3,260	600	1,790	107,000	B.
May.....	600	240	352	21,600	B.
The period.....				427,000	

TULE LAKE NEAR MERRILL, OREG.

Location.—In sec. 8, T. 41 S., R. 11 E., at J. F. Adams's ranch, near mouth of Lost River, 3 miles east of Merrill.

Records presented.—May 17, 1904, to September 30, 1910.

Gage.—Vertical staff fastened to post driven in lake bed. Datum of gage at present 0.83 foot higher than when checked in October, 1904. This change was verified in June, 1907, and again in November, 1907. As graph of gage heights has failed to reveal any critical points that would account for a sudden change, it is likely that the gage was raised by the ice a little at a time during the winters of 1905-6 and 1906-7. On account of this error the gage heights prior to May, 1907, should not be used for any refined studies.

Cooperation.—Station maintained by the United States Reclamation Service since May, 1909; records prepared for publication by engineers of United States Geological Survey.

Daily gage height, in feet, of Tule Lake near Merrill, Oreg., for 1904-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.	
1904.						1904.						
1						16			10.10			
2						17	10.50					
3						18					8.90	
4						19						
5						20						
6						21						
7						22				9.25		
8						23						
9						24						
10		10.40				25						
11					9.0	26						
12						27						
13						28						
14						29	10.70					
15				9.40		30						
						31				9.10		
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1												
2	8.80						9.25					
3									9.05	8.6		
4			8.50					9.2				
5												
6						9.1						
7											7.95	
8												
9	8.80											7.4
10									9.0	8.5		
11												
12					8.9							
13				8.6								
14											7.8	7.3
15		8.65				9.15						
16								9.15				
17										8.4		
18					8.9							
19									8.95			
20												
21											7.6	
22												7.2
23							9.2	9.1				
24						9.1				8.3		
25												
26												
27					9.0				8.7			
28												
29												
30												7.1
31				8.65						8.05	7.5	

Daily gage height, in feet, of Tule Lake near Merrill, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1							7.75		9.0	8.85	8.4	7.75
2					6.65	6.8						
3												
4												
5				6.5								
6												
7							8.4					7.7
8	7.05	6.85	6.85					9.1			8.2	
9					6.65	6.95			9.0	8.8		
10												
11				6.5								
12									9.0			
13												
14												
15			6.7									7.6
16	7.0	6.8				7.1	8.85	9.1		8.7	8.05	
17												
18												
19												
20												
21									8.9			
22							9.0				7.85	7.5
23	6.9	6.8		6.7						8.45		
24						7.3		9.05				
25						7.3						
26			6.6									
27												
28											7.8	
29												
30	6.95	6.8				7.7	9.1		8.85	8.4		7.4
31			6.55					9.0			7.8	
1906-7.												
1	7.4	7.15	7.0	7.35	7.4	9.05	10.5	11.35				
2												
3											10.5	
4						9.1						
5												
6										10.95		
7												10.05
8			7.1	7.3			10.9	11.3	11.3			
9	7.3											
10		7.15			8.6						10.4	
11												
12						9.3						
13										10.85		
14												9.95
15												
16				7.3			11.15	11.3	11.3			
17											10.3	
18			7.25									
19	7.2				8.8							
20		7.15								10.75		
21						9.9						9.8
22							11.3					
23				7.35				11.3				
24									11.15		10.25	
25			7.3									
26												
27										10.65		
28					9.05							9.75
29												
30		7.0					11.35		11.0			
31	7.15		7.35			10.5		11.3			10.15	

Daily gage height, in feet, of Tule Lake near Merrill, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907-8.												
1.				9.7	9.9						8.7	
2.		9.7		9.7				9.9				
3.				9.75								
4.				9.8			10.1			9.2		
5.	9.75											8.1
6.									9.6			
7.			9.6			9.95						
8.					9.9						8.6	
9.		9.7						9.85				
10.												
11.				9.8			10.05			9.15		
12.	9.75											8.0
13.									9.45			
14.						9.95						
15.					9.9						8.45	
16.		9.65	9.55					9.8				
17.												
18.				9.85			10.0			9.0		
19.	9.75											7.85
20.									9.35			
21.			9.6			10.0						
22.					9.9						8.2	
23.		9.6						9.75				
24.												
25.				9.9			9.95			8.9		
26.	9.75											7.8
27.									9.25			
28.			9.65			10.1						
29.			9.65		9.95						8.1	
30.	9.75	9.6	9.7					9.7				
31.			9.7									
1908-9.												
1.								9.7				
2.				7.35								
3.	7.75						9.4			9.05		
4.												7.95
5.			7.5						9.4			
6.					8.6	9.4	9.6					
7.		7.6									8.45	
8.								9.7				
9.				7.4								
10.	7.7						9.7			8.95		
11.												7.85
12.			7.5						9.35			
13.					8.8	9.45						
14.		7.6									8.35	
15.								9.5				
16.				7.5								
17.	7.65						9.8			8.7		
18.												7.8
19.			7.4						9.3			
20.					8.9	9.5						
21.		7.5									8.2	
22.								9.45				
23.				8.0								
24.	7.65						9.8			8.6		
25.												7.75
26.			7.35						9.15			
27.			7.35		9.0	9.5						
28.		7.5	7.35								8.05	
29.			7.35					9.4				
30.			7.35	8.4								
31.	7.6		7.35							8.55		

Daily gage height, in feet, of Tule Lake near Merrill, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1				7.95								
2	7.6						9.05			8.05		
3												6.8
4			7.8						8.5			
5					8.0	8.5						
6		7.45									7.5	
7								8.8				
8				7.95								
9	7.5						9.05			7.95		
10												6.7
11												
12			8.0		8.0				8.4			
13						8.75						
14		7.45						8.75			7.4	
15				7.95								
16	7.4						9.0			7.8		
17												6.65
18			8.0						8.3			
19					8.15	8.9						
20		7.5									7.2	
21								8.7				
22				7.95								
23	7.4						8.95			7.7		
24												6.5
25			7.95						8.1			
26					8.25	9.0						
27												
28		7.6									7.0	
29								8.6				
30	7.45			7.95			8.9			7.6		
31												

MILLER CREEK NEAR LORELLA, OREG.

Location.—In sec. 7, T. 40 S., R. 14 E., at the highway bridge 3 miles south of Lorella and 1 mile east of the Swingle ranch in Langell Valley, since April 1, 1909; August 10, 1904, to December, 1908, in sec. 12, T. 39 S., R. 13 E., 9 miles northeast of Lorella, at the lower end of Horsefly Valley.

Records presented.—August 10, 1904, to September 30, 1910.

Drainage area.—270 square miles; at old station 220 square miles.

Gage.—Friez automatic register. No change in datum since April 1, 1909.

Channel.—Rocky and fairly permanent.

Discharge measurements.—At medium and high stages made from highway bridge; low-water measurements made by wading at riffle.

Diversions.—A small irrigating flume carrying about 1 second-foot diverts just above present station.

Winter flow.—River freezes over completely; winter records not reliable. As the total annual flow, however, is the important feature, a large error during such periods is admissible without affecting the desired results.

Accuracy.—Results fair; records somewhat fragmentary until Friez gage was installed January 30, 1910, but discharge has been estimated for all periods for which gage heights were missing.

Cooperation.—Station maintained by United States Reclamation Service since May, 1909; records worked up by engineers of United States Geological Survey.

Discharge measurements of Miller Creek near Lorella, Oreg., in 1904-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
June 24	T. H. Humphreys.....		^a 15.00	Apr. 22	L. F. Hendricks.....	7.55	308
July 7	do.....		^a 12.00	25	do.....	7.62	309
Aug. 4	do.....		^a 5.00	July 14	do.....	5.80	0
23	do.....		^a 1.00				
Sept. 27	do.....	6.10	1.71	1907.			
Oct. 16	C. T. Darley.....	6.20	4.09	Feb. 8	L. F. Hendricks.....	8.02	505
Nov. 19	do.....	6.25	7.26	8	do.....	7.70	332
				Apr. 13	do.....	7.95	466
1905.				25	do.....	7.00	80
Jan. 28	C. T. Darley.....	7.25	146	May 14	Stevens and Ellsworth.	6.75	57
Feb. 4	do.....	7.30	161	June 6	C. E. Ellsworth.....	6.20	5.8
6	do.....	6.99	87	21	do.....	6.41	16
25	do.....	7.30	177				
Mar. 8	do.....	7.14	124	1908.			
15	F. S. Chapman.....	6.92	95	Feb. 22	C. E. Ellsworth.....	6.32	12
Apr. 2	C. T. Darley.....	8.00	460	Mar. 19	do.....	7.56	298
9	do.....	6.88	62	Apr. 7	do.....	6.60	35
28	do.....	6.19	3.1	May 1	Ellsworth and Kimble.	6.10	2.0
June 1	do.....	6.11	2.0	Nov. 24	Kimble and McGlashan	6.09	1.5
1906.				1909.			
Mar. 27	L. F. Hendricks.....	8.65	883	Mar. 3	Howard Kimble.....	5.90	651
23	C. T. Darley.....	8.65	884	26	do.....	4.90	285
29	L. F. Hendricks.....	8.80	1,040	May 2	do.....	3.45	54
30	do.....	9.50	1,440	26	Kimble and Gieger.....	2.92	9.5
Apr. 30	do.....	10.10	1,940	Sept. 18	John Yadon.....	2.12	1.35
4	do.....	8.25	629	Nov. 22	do.....	8.05	1,590
5	do.....	9.00	1,110	24	do.....	6.60	891
6	do.....	9.28	1,240				
9	do.....	10.65	2,550	1910.			
10	do.....	9.72	1,690	Aug. 2	Yadon and Moser.....	2.55	^a 1.25

^a Estimated.

Daily gage height, in feet, of Miller Creek near Lorella, Oreg., for 1904-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1904.			1904.			1904.		
1.....	6.1	6.0	11.....	6.1		21.....	6.1	
2.....	6.1	6.0	12.....	6.1		22.....	6.1	
3.....	6.1	6.0	13.....	6.1		23.....	6.05	
4.....	6.1	6.0	14.....	6.1		24.....	6.05	
5.....	6.1	6.0	15.....	6.1		25.....	6.05	
6.....	6.1	6.0	16.....	6.1		26.....	6.0	
7.....	6.1	6.0	17.....	6.1		27.....	6.0	6.1
8.....	6.1	6.0	18.....	6.1		28.....	6.0	6.1
9.....	6.1	6.0	19.....	6.1		29.....	6.0	6.1
10.....	6.1	6.0	20.....	6.1		30.....	6.0	6.1
						31.....	6.0	

Daily gage height, in feet, of Miller Creek near Lorella, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.	6.1	6.1	6.2	6.3	8.0	7.2	7.0	6.3	6.2			
2.	6.1	6.2	6.2	6.3	8.2	7.2	8.0	6.3	6.1			
3.	6.1	6.2	6.15	6.3	7.7	7.3	7.8	6.3	6.1			
4.	6.1	6.2	6.1	6.3	7.3	7.3	7.6	6.3	6.2			
5.	6.1	6.2	6.1	6.3	7.7	7.3	7.4	6.3	6.2			
6.	6.1	6.2	6.1	6.3	7.0	7.2	7.2	6.3	6.3			
7.	6.1	6.2	6.1	6.3	7.0	7.2	7.0	6.2	6.3			
8.	6.1	6.2	6.1	6.3	7.0	7.2	6.9	6.2	6.3			
9.	6.15	6.2	6.1	6.3	7.0	7.1	6.8	6.4	6.3			
10.	6.15	6.15	6.1	6.3	6.9	7.1	6.8	6.4	6.3			
11.	6.3	6.15	6.10	6.3	6.0	7.0	6.8	6.4	6.3			
12.	6.3	6.15	6.15	6.3	6.5	7.1	6.6	6.4	6.3			
13.	6.2	6.15	6.20	6.3	6.5	7.1	6.6	6.4	6.2			
14.	6.15	6.15	6.35	6.3	6.4	7.1	6.5	6.4	6.2			
15.	6.2	6.15		6.3	6.4	6.8	6.5	6.3	6.2			
16.	6.2	6.15		7.5	6.4	7.3	6.6	6.3	6.2			
17.	6.2	6.15		7.6	6.4	7.3	6.6	6.3				
18.	6.2	6.3		7.7	6.4	7.3	6.6	6.3				
19.	6.1	6.2		7.5	6.8	7.4	6.5	6.3				
20.	6.1	6.2		7.5	7.2	7.4	6.5	6.2				
21.	6.1	6.2		7.5	7.3	7.1	6.5	6.1				
22.	6.1	6.2		7.9	7.3	7.3	6.4	6.0				
23.	6.1	6.2		8.2	7.3	7.3	6.4	6.0				
24.	6.1	6.2		7.9	7.3	7.2	6.4	6.0				
25.	6.1	6.2		7.9	7.3	7.2	6.3	5.9				
26.	6.1	6.2		7.7	7.3	7.9	6.3	6.1				
27.	6.1	6.2		7.7	7.3	7.5	6.2	6.1				
28.	6.1	6.2		7.3	7.3	7.4	6.2	6.2				
29.	6.1	6.2	6.3	7.5		7.4	6.2	6.3				
30.	6.1	6.2	6.3	8.0		7.2	6.2	6.2				
31.	6.1		6.3	8.3		7.2		6.2				
1905-6.												
1.				6.2	6.3	7.0	8.1	7.0	7.2	6.15		
2.				6.2	6.3	7.1	8.1	7.0	7.0	6.15		
3.				6.2	6.3	7.1	8.4	6.9	6.9	6.1		
4.				6.2	6.3	7.05	8.15	6.8	6.9	6.1		
5.				6.2	6.3	7.0	9.2	6.7	7.0	6.05		
6.				6.2	6.3	7.05	9.5	6.7	7.3	6.05		
7.				6.3	6.3	7.2	9.9	6.7	7.2	6.0		
8.				6.3	6.3	7.5	9.9	6.6	7.2	6.0		
9.				6.4	6.3	7.7	10.5	6.6	7.1			
10.				6.4	6.3	7.8	10.0	6.5	7.0			
11.				6.4	6.3	7.7	9.1	6.5	6.9			
12.				6.3	6.3	7.6	8.8	6.5	6.8			
13.				6.3	6.3	7.5	8.8	6.7	6.8			
14.				6.3	6.3	7.3	8.7	6.7	6.7			
15.				6.3	6.3	7.1	8.7	6.7	6.6			
16.				6.3	6.3	6.9	8.9	6.7	6.5			
17.				6.3	6.3	6.7	8.5	6.7	6.5			
18.				6.3	6.3	6.7	8.1	6.6	6.4			
19.				6.3	6.3	6.7	7.9	6.6	6.4			
20.				6.3	6.3	6.7	7.8	6.5	6.3			
21.				6.3	6.3	7.2	7.7	6.5	6.3			
22.				6.3	6.3	7.8	7.5	6.5	6.2			
23.				6.3	6.3	8.3	7.5	6.5	6.2			
24.				6.3	6.2	8.8	7.4	6.5	6.1			
25.				6.3	6.4	9.7	7.5	6.4	6.1			
26.				6.3	6.6	9.0	7.4	6.5	6.1			
27.				6.3	6.7	8.6	7.3	6.8	6.1			
28.				6.3	6.8	8.65	7.4	7.1	6.15			
29.				6.3		8.65	7.4	7.5	6.15			
30.				6.3		9.7	7.2	7.5	6.15			
31.				6.3		9.6		7.4				

Daily gage height, in feet, of Miller Creek near Lorella, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1			6.1	6.45	7.7	7.3		6.77	6.26			
2			6.1	6.2	8.9	7.3		6.73	6.25			
3			6.1	6.1	11.55	7.25		6.70	6.24			
4			6.1	6.1	13.0	7.2		6.70	6.20			
5			6.2	6.1	14.0	7.35		6.68	6.18			
6			6.2	6.1	12.0	7.4	8.1	6.65	6.22	6.00		
7			6.35	6.1	10.0	7.4	9.5	6.65				
8			6.4	6.1	7.7	7.85		6.65	6.35			
9			6.3	6.1	7.85	7.9		6.63				
10			6.3	6.1	7.65	7.55		6.58				
11			6.3	6.1	7.55	7.5		6.70				
12			6.2	6.1	7.45	7.3		6.78				
13			6.2	6.1	7.3	7.35	8.0	6.81				
14			6.2	6.1	7.25	7.2		6.75				
15			6.2	6.1	7.2	7.2		6.66	7.00			
16			6.2	6.1	7.2	7.2		6.58				
17			6.2	6.1	7.35	8.0		6.50				
18		6.1	6.2	6.1	7.5	9.8		6.50				
19		6.1	6.2	6.1	7.4	10.15		6.58				
20		6.1	6.25	6.1	7.35	9.8	7.1	6.62				
21		6.1	6.3	6.1	7.3	9.4	7.1	6.65				
22		6.1	6.3	6.1	8.0	9.0	7.1	6.75	6.30			
23		6.1	6.4	6.2	7.8	8.7	7.05	6.70				
24		6.1	6.6	6.2	7.4	8.3	7.0					
25		6.1	7.65	6.3	7.8	7.9	7.0	6.70				
26		6.1	8.35	6.3	7.85	7.6	6.95	6.65		5.70		
27		6.1	7.95	6.3	7.7	7.75	6.90	6.57				
28		6.1	7.4	6.3	7.4	7.65	6.88	6.49				
29		6.1	7.4	6.65		7.95	6.85	6.42	6.10			
30		6.1	6.8	7.2		8.5	6.80	6.35				
31			6.6	7.95		8.4		6.29				
1907-8.												
1		6.18			6.20		6.70	6.10				
2		6.20					6.70	6.07				
3		6.20					6.60	6.05	6.00			
4		6.20		6.50			6.50	6.04				
5		6.19					6.50	6.05				
6		6.19					6.51	6.09				
7		6.18	6.20			6.70	6.55	6.09	5.90			
8					6.20		6.54	6.05				
9		6.10			6.16		6.50					
10		6.10			6.00		6.44	6.21				
11		6.10		6.40	6.15		6.40	6.22				
12		6.10			6.18		6.40	6.22				
13		6.10			6.20		6.40	6.23				
14		6.10	6.10			7.60	6.38	6.18	5.90			
15		6.10			6.40		6.36	6.12				
16		6.10			6.35		6.35	5.90				
17		6.12			6.30		6.50	6.50				
18		6.11		7.30	6.30		6.40					
19		6.11		7.30	6.30	7.60	6.39					
20		6.11		7.30	6.30		6.32					
21		6.11	6.40	7.32		6.90	6.28					
22		6.16		7.34	6.32		6.26					
23		6.20	8.00	7.37			6.24					
24			8.00				6.24	6.60				
25			7.60	7.40			6.23					
26	6.12		7.15				6.22					
27	6.15		7.15				6.22					
28	6.20		7.05			6.70	6.15					
29	6.17				6.50		6.10					
30	6.20	6.10										
31	6.20					6.70						

Daily gage height, in feet, of Miller Creek near Lorella, Oreg., for 1904-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept
1908-9.												
1		6.01		5.00	3.45	3.08	2.54	2.40				
2					3.37	3.06	2.52					
3			5.90		3.37	3.04	2.50					
4					3.28	3.00	2.45					
5		6.02			3.28	2.81	2.42		2.30			
6					3.28	2.81	2.30					
7					3.27	2.75	2.35					
8				5.30	3.00	2.88	2.30	2.50				
9						2.90	2.23					
10						2.85	2.20					
11						2.82	2.30					
12						2.78			2.20			
13						2.75						
14						2.76						
15				5.00		2.90		2.40				
16					2.66	2.92						
17					2.87	2.93						
18					2.95	3.00	2.20		2.12			
19					2.95	3.08			2.12			
20					2.95	3.20						
21					2.83	3.10						
22				4.10	2.90	3.00	2.20	2.40				
23					2.95	2.75						
24	6.09				2.93	2.75						
25					2.95	2.66	2.20					
26			4.90		2.95	2.63			2.10			
27					2.97	2.49						
28					2.95	2.50						
29				3.70	3.10	2.53		2.40				
30					3.00	2.54						
31					2.98							
1909-10.												
1				2.20	3.95	8.50	4.24	2.85	2.95	2.66	2.60	2.65
2				2.40	3.75	7.10	4.10	2.96	2.95	2.70	2.60	2.65
3	2.20			2.40	3.56	6.70	4.02	3.12	2.94	2.70	2.60	2.60
4				2.20	3.20	7.00	3.95	3.22	2.80	2.70	2.60	2.60
5	2.20		3.30	2.40	3.00	6.80	3.85	2.18	2.78	2.70	2.60	2.60
6				2.60	3.08	6.40	3.76	3.06	2.78	2.70	2.58	2.61
7		3.00		2.50	3.08	6.10	3.65	2.98	2.77	2.70	2.59	2.62
8				2.50	3.08	6.05	3.56	2.89	2.75	2.70	2.60	2.62
9				2.00	3.08	6.10	3.50	2.78	2.74	2.70	2.61	2.62
10	2.30			1.80	3.08	6.10	3.45	2.72	2.71	2.70	2.63	2.61
11				1.80	3.15	6.15	3.45	2.65	2.70	2.70	2.64	2.61
12			3.30	2.00	3.18	6.20	3.50	2.59	2.70	2.65	2.66	2.62
13				2.30	3.70	6.10	3.37	2.48	2.70	2.65	2.68	2.63
14		3.00		2.30	3.42	6.10	3.25	2.35	2.70	2.62	2.69	2.66
15				2.10	3.38	6.00	3.15	2.28	2.72	2.62	2.70	2.70
16				1.60	3.22	5.80	3.06	2.22	2.76	2.60	2.70	2.72
17	2.20			1.80	3.18	5.90	2.98	2.19	2.78	2.60	2.71	2.71
18		3.00	3.20	1.90	3.00	6.00	2.90	2.52	2.78	2.60	2.70	2.71
19		3.50		1.70	2.90	6.18	2.81	2.90	2.78	2.61	2.70	2.72
20		4.50		2.00	2.90	5.54	2.74	2.95	2.76	2.63	2.70	2.73
21		7.20		3.20	2.90	5.15	2.71	2.98	2.75	2.64	2.70	2.75
22		8.05		6.10	2.90	5.35	2.70	2.96	2.75	2.63	2.70	2.74
23		8.00		6.20	2.90	5.40	2.68	2.92	2.75	2.60	2.68	2.72
24	2.40	6.60		4.60	3.20	5.00	2.60	2.90	2.74	2.60	2.62	2.70
25		5.90		4.20	4.40	4.90	2.55	2.91	2.70	2.60	2.59	2.70
26		5.00	2.80	3.80	4.10	4.65	2.48	2.94	2.67	2.60	2.58	2.70
27		4.30		4.10	4.30	4.62	2.50	2.92	2.66	2.60	2.60	2.70
28		4.10		4.10	6.60	4.42	2.47	2.90	2.65	2.60	2.60	2.70
29		3.60		4.30		4.22	2.52	2.88	2.65	2.60	2.60	2.70
30		3.30		4.20		4.16	2.71	2.85	2.65	2.60	2.62	2.70
31	2.70			4.10		4.15		2.89		2.60	2.64	

NOTE.—Creek dry June 17 to Dec. 31, 1905, July 7 to Nov. 17, 1906, July 18 to Oct. 25, 1907, and July 1 to Nov. 10, 1908. During the winter stream freezes over at gage but not at the rifle control, so discharge relation is not materially affected by ice. Low gage heights Jan. 9-20, 1910, may be due to effect of low temperature on Bristol gage and not to low discharge.

Daily discharge, in second-feet, of Miller Creek near Lorella, Oreg., for 1904-1910.

Day.	Aug.	Sept.	Day.	Aug.	Sept.	Day.	Aug.	Sept.
1904.			1904.			1904.		
1.....	1.5	0.0	11.....	1.5	0.0	21.....	1.5	0.0
2.....	1.5	.0	12.....	1.5	.0	22.....	1.5	.0
3.....	1.5	.0	13.....	1.5	.0	23.....	.8	.0
4.....	1.5	.0	14.....	1.5	.0	24.....	.8	.0
5.....	1.5	.0	15.....	1.5	.0	25.....	.8	.0
6.....	1.5	.0	16.....	1.5	.0	26.....	.0	.0
7.....	1.5	.0	17.....	1.5	.0	27.....	.0	1.5
8.....	1.5	.0	18.....	1.5	.0	28.....	.0	1.5
9.....	1.5	.0	19.....	1.5	.0	29.....	.0	1.5
10.....	1.5	.0	20.....	1.5	.0	30.....	.0	1.5
						31.....	.0	.0

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	1.5	1.5	4.0	8.0	460	135	86	8.0	4.0	0.0	0.0	0.0
2.....	1.5	4.0	4.0	8.0	561	135	460	8.0	1.5	.0	.0	.0
3.....	1.5	4.0	2.8	8.0	317	163	363	8.0	1.5	.0	.0	.0
4.....	1.5	4.0	1.5	8.0	163	163	274	8.0	4.0	.0	.0	.0
5.....	1.5	4.0	1.5	8.0	317	163	196	8.0	4.0	.0	.0	.0
6.....	1.5	4.0	1.5	8.0	86	135	135	8.0	8.0	.0	.0	.0
7.....	1.5	4.0	1.5	8.0	86	135	86	4.0	8.0	.0	.0	.0
8.....	1.5	4.0	1.5	8.0	86	135	67	4.0	8.0	.0	.0	.0
9.....	2.8	4.0	1.5	8.0	86	109	52	13	8.0	.0	.0	.0
10.....	2.8	2.8	1.5	8.0	67	109	52	13	8.0	.0	.0	.0
11.....	8.0	2.8	1.5	8.0	29	86	52	13	8.0	.0	.0	.0
12.....	8.0	2.8	2.8	8.0	20	109	29	13	8.0	.0	.0	.0
13.....	4.0	2.8	4.0	8.0	20	109	29	13	4.0	.0	.0	.0
14.....	2.8	2.8	10	8.0	13	109	20	13	4.0	.0	.0	.0
15.....	4.0	2.8	10	8.0	13	52	20	8.0	4.0	.0	.0	.0
16.....	4.0	2.8	10	234	13	163	29	8.0	4.0	.0	.0	.0
17.....	4.0	2.8	10	274	13	163	29	8.0	.0	.0	.0	.0
18.....	4.0	8.0	10	317	13	163	29	8.0	.0	.0	.0	.0
19.....	1.5	4.0	10	234	52	196	20	8.0	.0	.0	.0	.0
20.....	1.5	4.0	10	234	135	196	20	4.0	.0	.0	.0	.0
21.....	1.5	4.0	10	234	163	109	20	1.5	.0	.0	.0	.0
22.....	1.5	4.0	10	411	163	163	13	.0	.0	.0	.0	.0
23.....	1.5	4.0	8.0	561	163	163	13	.0	.0	.0	.0	.0
24.....	1.5	4.0	8.0	411	163	135	13	.0	.0	.0	.0	.0
25.....	1.5	4.0	8.0	411	163	135	8.0	.0	.0	.0	.0	.0
26.....	1.5	4.0	8.0	317	163	411	8.0	1.5	.0	.0	.0	.0
27.....	1.5	4.0	8.0	317	163	234	4.0	1.5	.0	.0	.0	.0
28.....	1.5	4.0	8.0	163	163	196	4.0	4.0	.0	.0	.0	.0
29.....	1.5	4.0	8.0	234	196	196	4.0	8.0	.0	.0	.0	.0
30.....	1.5	4.0	8.0	460	135	4.0	4.0	.0	.0	.0	.0	.0
31.....	1.5	8.0	613	135	4.0	4.0	.0	.0	.0	.0	.0	.0
1905-6.												
1.....	.0	.0	.0	4.0	8.0	86	545	86	136	2.8	.0	.0
2.....	.0	.0	.0	4.0	8.0	109	545	86	86	2.8	.0	.0
3.....	.0	.0	.0	4.0	8.0	109	715	67	67	1.5	.0	.0
4.....	.0	.0	.0	4.0	8.0	98	572	52	67	1.5	.0	.0
5.....	.0	.0	.0	4.0	8.0	86	1,260	39	86	.8	.0	.0
6.....	.0	.0	.0	4.0	8.0	98	1,500	39	168	.8	.0	.0
7.....	.0	.0	.0	8.0	8.0	136	1,830	39	136	.0	.0	.0
8.....	.0	.0	.0	8.0	8.0	245	1,830	29	136	.0	.0	.0
9.....	.0	.0	.0	13	8.0	337	2,360	29	109	.0	.0	.0
10.....	.0	.0	.0	13	8.0	387	1,920	20	86	.0	.0	.0
11.....	.0	.0	.0	13	8.0	337	1,180	20	67	.0	.0	.0
12.....	.0	.0	.0	8.0	8.0	290	965	20	52	.0	.0	.0
13.....	.0	.0	.0	8.0	8.0	245	965	29	52	.0	.0	.0
14.....	.0	.0	.0	8.0	8.0	168	900	39	39	.0	.0	.0
15.....	.0	.0	.0	8.0	8.0	109	900	39	29	.0	.0	.0
16.....	.0	.0	.0	8.0	8.0	67	1,040	39	20	.0	.0	.0
17.....	.0	.0	.0	8.0	8.0	39	775	39	20	.0	.0	.0
18.....	.0	.0	.0	8.0	8.0	39	545	29	13	.0	.0	.0
19.....	.0	.0	.0	8.0	8.0	39	437	29	13	.0	.0	.0
20.....	.0	.0	.0	8.0	8.0	39	387	20	8.0	.0	.0	.0
21.....	.0	.0	.0	8.0	8.0	136	337	20	8.0	.0	.0	.0
22.....	.0	.0	.0	8.0	8.0	337	245	20	4.0	.0	.0	.0
23.....	.0	.0	.0	8.0	8.0	655	245	20	4.0	.0	.0	.0
24.....	.0	.0	.0	8.0	4.0	965	205	20	1.5	.0	.0	.0
25.....	.0	1.5	.0	8.0	13	1,660	245	13	1.5	.0	.0	.0
26.....	.0	.0	.0	8.0	29	1,110	205	20	1.5	.0	.0	.0
27.....	.0	.0	.0	8.0	39	835	168	52	1.5	.0	.0	.0
28.....	.0	.0	.0	8.0	52	865	205	109	2.8	.0	.0	.0
29.....	.0	.0	.0	8.0	865	205	245	2.8	.0	.0	.0	.0
30.....	.0	.0	.0	8.0	1,660	136	245	2.8	.0	.0	.0	.0
31.....	.0	.0	.0	8.0	1,580	205	205	.0	.0	.0	.0	.0

Daily discharge, in second-feet, of Miller Creek near Lorella, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	0.0	0.0	1.5	21	337	170	687	55	8.0	1.3	0.0	0.0
2.....	.0	.0	1.5	5.0	1,040	170	658	50	7.5	1.1	.0	.0
3.....	.0	.0	1.5	1.7	3,540	154	630	46	7.0	.9	.0	.0
4.....	.0	.0	1.5	1.7	5,310	138	602	46	5.0	.7	.0	.0
5.....	.0	.0	4.0	1.7	6,730	188	573	44	4.3	.5	.0	.0
6.....	.0	.0	4.0	1.7	4,080	206	545	40	6.0	.3	.0	.0
7.....	.0	.0	10	1.7	1,920	206	1,500	40	9.6	.2	.0	.0
8.....	.0	.0	13	1.7	337	412	1,330	40	13.3	.2	.0	.0
9.....	.0	.0	8.0	1.7	412	437	1,160	38	24	.1	.0	.0
10.....	.0	.0	8.0	1.7	314	268	1,000	33	35	.1	.0	.0
11.....	.0	.0	8.0	1.7	268	246	830	46	46	.0	.0	.0
12.....	.0	.0	4.0	1.7	226	170	660	56	57	.0	.0	.0
13.....	.0	.0	4.0	1.7	170	188	490	60	68	.0	.0	.0
14.....	.0	.0	4.0	1.7	154	138	436	52	79	.0	.0	.0
15.....	.0	.0	4.0	1.7	138	138	382	42	90	.0	.0	.0
16.....	.0	.0	4.0	1.7	138	138	328	33	79	.0	.0	.0
17.....	.0	.0	4.0	1.7	188	490	274	25	65	.0	.0	.0
18.....	.0	1.5	4.0	1.7	246	1,740	220	25	54	.0	.0	.0
19.....	.0	1.5	4.0	1.7	206	2,060	166	33	42	.0	.0	.0
20.....	.0	1.5	6.0	1.7	188	1,740	112	37	31	.0	.0	.0
21.....	.0	1.5	8.0	1.7	170	1,420	112	40	20	.0	.0	.0
22.....	.0	1.5	8.0	1.7	490	1,110	112	52	10.0	.0	.0	.0
23.....	.0	1.5	13	5.0	387	900	101	46	8.8	.0	.0	.0
24.....	.0	1.5	29	5.0	206	655	90	46	7.6	.0	.0	.0
25.....	.0	1.5	314	10.0	387	437	90	46	6.4	.0	.0	.0
26.....	.0	1.5	685	10.0	412	290	82	40	5.3	.0	.0	.0
27.....	.0	1.5	464	10.0	337	362	73	32	4.1	.0	.0	.0
28.....	.0	1.5	205	10.0	206	314	70	24	2.9	.0	.0	.0
29.....	.0	1.5	205	40	-----	464	66	18.3	1.7	.0	.0	.0
30.....	.0	1.5	52	138	-----	775	59	13.3	1.5	.0	.0	.0
31.....	.0	-----	29	464	-----	715	-----	9.5	-----	.0	.0	-----
1907-8.												
1.....	.0	4.3	2.2	58	5.0	28	46	1.7	7.0	.0	.0	.0
2.....	.0	5.0	2.6	47	5.0	31	46	1.3	4.0	.0	.0	.0
3.....	.0	5.0	3.1	36	5.0	34	35	1.0	.3	.0	.0	.0
4.....	.0	5.0	3.6	25	5.0	37	25	.9	.2	.0	.0	.0
5.....	.0	4.7	4.1	24	5.0	40	25	1.0	.2	.0	.0	.0
6.....	.0	4.7	4.5	23	5.0	43	26	1.6	.1	.0	.0	.0
7.....	.0	4.3	5.0	21	5.0	46	30	1.6	.0	.0	.0	.0
8.....	.0	3.0	4.5	20	5.0	81	29	1.0	.0	.0	.0	.0
9.....	.0	1.7	4.1	19	3.7	116	25	3.2	.0	.0	.0	.0
10.....	.0	1.7	3.6	18	.3	151	20	5.5	.0	.0	.0	.0
11.....	.0	1.7	3.1	16.6	3.4	185	16.6	6.0	.0	.0	.0	.0
12.....	.0	1.7	2.6	38	4.3	220	16.6	6.0	.0	.0	.0	.0
13.....	.0	1.7	2.2	60	5.0	255	16.6	6.5	.0	.0	.0	.0
14.....	.0	1.7	1.7	82	11.0	290	15.3	4.3	.0	.0	.0	.0
15.....	.0	1.7	3.8	104	16.6	290	14.0	2.4	.0	.0	.0	.0
16.....	.0	1.7	6.0	126	13.3	290	13.3	.0	.0	.0	.0	.0
17.....	.0	2.4	8.1	148	10.0	290	25	25	.0	.0	.0	.0
18.....	.0	2.0	10.2	170	10.0	290	16.6	26	.0	.0	.0	.0
19.....	.0	2.0	12.3	170	10.0	290	15.9	28	.0	.0	.0	.0
20.....	.0	2.0	14.5	170	10.0	182	11.3	29	.0	.0	.0	.0
21.....	.0	2.0	16.6	177	10.6	73	9.0	31	.0	.0	.0	.0
22.....	.0	3.7	253	184	11.3	69	8.0	32	.0	.0	.0	.0
23.....	.0	5.0	490	195	13	65	7.0	34	.0	.0	.0	.0
24.....	.0	4.5	490	200	15	61	7.0	35	.0	.0	.0	.0
25.....	.0	4.1	290	206	17	58	6.5	32	.0	.0	.0	.0
26.....	2.4	3.6	125	175	19	54	6.0	28	.0	.0	.0	.0
27.....	3.4	3.1	125	145	21	50	6.0	24	.0	.0	.0	.0
28.....	5.0	2.6	101	120	23	46	3.4	21	.0	.0	.0	.0
29.....	4.0	2.2	90	90	25	46	1.7	18	.0	.0	.0	.0
30.....	5.0	1.7	79	60	-----	46	1.7	14	.0	.0	.0	.0
31.....	5.0	-----	69	30	-----	46	-----	10	-----	.0	.0	.0

Daily discharge, in second-feet, of Miller Creek near Lorella, Oreg., for 1904-1910—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1908-9.												
1.....	0.0	0.0	.4	5.0	110	560	330	49	17	4.4	3.0	2.5
2.....	.0	.0	.5	5.0	110	590	340	41	16	4.2	3.1	2.5
3.....	.0	.0	.5	5.0	70	622	360	41	14	4.0	3.3	2.3
4.....	.0	.0	.5	5.0	30	680	370	32	12	3.5	3.5	2.1
5.....	.0	.0	.6	5.0	20	740	380	32	7.2	3.2	3.5	2.0
6.....	.0	.0	.5	15	20	620	390	32	7.2	2.0	3.7	1.9
7.....	.0	.0	.5	20	70	500	400	32	6.5	2.5	3.9	1.8
8.....	.0	.0	.5	70	120	410	418	12	8.6	2.0	4.0	1.8
9.....	.0	.0	.5	120	120	380	400	11	9.0	1.7	3.9	1.7
10.....	.0	.0	.5	160	130	360	390	10	8.0	1.5	3.7	1.7
11.....	.0	.2	.5	100	130	340	380	10	7.4	2.0	3.5	1.6
12.....	.0	.2	.5	60	140	330	360	9.0	6.8	2.0	3.5	1.5
13.....	.0	.2	.5	60	150	320	350	8.0	6.5	2.0	3.3	1.4
14.....	.0	.2	.5	80	180	320	340	7.0	6.6	2.0	3.1	1.3
15.....	.0	.2	.5	100	220	310	330	6.0	9.0	1.5	3.0	1.3
16.....	.0	.2	.5	190	270	310	300	5.6	9.6	1.5	3.0	1.3
17.....	.0	.5	.5	400	320	300	280	8.4	9.9	1.5	3.0	1.2
18.....	.0	.5	.5	500	370	300	250	10.5	12	1.5	3.0	1.1
19.....	.0	.5	.5	510	390	300	220	10.5	17	1.5	3.0	1.1
20.....	.0	1.0	.5	570	390	300	190	10.5	26	1.5	3.0	1.1
21.....	.0	1.0	.5	500	380	300	160	7.6	18	1.5	3.0	1.1
22.....	.0	1.0	.5	460	370	300	134	9.0	12	1.5	3.0	1.1
23.....	.0	1.5	.5	450	380	300	126	10.5	6.5	1.5	3.0	1.0
24.....	.0	1.6	.5	450	400	300	118	9.9	6.5	1.5	3.0	1.0
25.....	.0	1.5	.5	440	420	300	110	10.5	5.6	1.5	3.0	1.0
26.....	.0	1.0	.5	400	460	302	102	10.5	5.3	1.5	3.0	1.0
27.....	.0	1.0	.5	200	490	310	94	11.1	3.9	1.5	3.0	1.1
28.....	.0	1.0	.5	120	530	320	86	10.5	4.0	1.5	3.0	1.2
29.....	.0	.5	1.0	110	-----	320	78	18	4.3	3.0	3.0	1.2
30.....	.0	.5	1.0	110	-----	320	62	12	4.4	3.0	2.9	1.3
31.....	.0	-----	1.5	110	-----	330	-----	11.4	-----	3.0	2.7	-----
1909-10.												
1.....	1.3	6	34	2	111	2,620	148	6	8	3	2	2
2.....	1.4	6	34	3	84	1,410	122	9	8	3	2	2
3.....	1.5	6	34	3	61	1,120	109	14	8	3	2	2
4.....	1.5	12	24	2	26	1,330	98	18	5	3	2	2
5.....	1.5	12	34	3	14	1,190	83	16	5	3	2	2
6.....	1.6	12	34	5	18	940	71	12	5	3	2	2
7.....	1.7	12	34	4	18	770	58	9	4	3	2	2
8.....	1.8	12	34	4	18	745	49	7	4	3	2	2
9.....	1.9	12	34	2	18	770	43	5	4	3	2	2
10.....	2.0	12	34	2	18	770	38	3	3	3	2	2
11.....	1.9	12	34	2	22	795	38	2	3	3	2	2
12.....	1.8	12	34	2	25	820	43	2	3	2	3	2
13.....	1.8	12	32	2	78	770	30	1	3	2	3	2
14.....	1.7	12	32	2	46	770	20	0	3	2	3	3
15.....	1.7	12	30	2	42	720	15	0	3	2	3	3
16.....	1.6	12	28	2	28	620	12	0	4	2	3	3
17.....	1.5	12	28	2	25	670	9	0	5	2	3	3
18.....	1.6	12	26	2	14	720	7	1	5	2	3	3
19.....	1.9	54	24	2	11	810	5	7	5	2	3	3
20.....	2.2	214	22	2	11	516	4	8	4	2	3	4
21.....	2.3	1,490	19	26	11	380	3	9	4	2	3	4
22.....	2.6	2,200	16	770	11	447	3	9	4	2	3	4
23.....	2.9	2,160	13	820	11	464	3	8	4	2	3	3
24.....	3.0	1,060	11	238	26	334	2	7	4	2	2	3
25.....	3.0	670	9	152	192	306	2	7	3	2	2	3
26.....	4.0	344	7	90	134	239	1	8	3	2	2	3
27.....	4.0	172	7	134	172	231	1	8	3	2	2	3
28.....	5.0	134	7	134	1,060	184	1	7	2	2	2	3
29.....	5.0	66	7	172	-----	144	1	7	2	2	2	3
30.....	6.0	34	7	152	-----	133	3	6	2	2	2	3
31.....	6.0	-----	7	134	-----	131	-----	7	-----	2	2	-----

NOTE.—Daily discharge determined from rating curves applicable as follows: 1904 and 1905, well defined between 2 and 500 second-feet; 1906, well defined; 1907 and 1908, well defined; 1909, fairly well defined above 10 second-feet; Jan. 1 to Feb. 23, 1910, fairly well defined; Mar. 1 to Sept. 30, 1910, well defined above and fairly well defined below 50 second-feet. Discharge for days on which gage was not read interpolated or estimated from hydrographs of neighboring streams. Discharges below 10 second-feet are only approximate.

Monthly discharge of Miller Creek near Lorella, Oreg., for 1904-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
August.....	1.5	0.0	1.1	68	C.
September.....	1.5	.0	.2	12	C.
1904-5.					
October.....	8.0	1.5	2.4	148	B.
November.....	8.0	1.5	3.7	221	B.
December.....	10	1.5	6.2	381	B.
January.....	613	8.0	179	11,010	B.
February.....	561	13	138	7,664	A.
March.....	411	52	153	9,408	A.
April.....	460	4.0	71.0	4,225	B.
May.....	13	.0	6.5	400	C.
June.....	8.0	.0	3.0	179	C.
July.....	.0	.0	.0	0	
August.....	.0	.0	.0	0	
September.....	.0	.0	.0	0	
The year.....	613	.0	46.9	33,600	
1905-6.					
October.....	.0	.0	.0	0	
November.....	.0	.0	.0	0	
December.....	.0	.0	.0	0	
January.....	13	4.0	7.7	474	B.
February.....	52	4.0	11.5	639	B.
March.....	1,660	39	445	27,400	A.
April.....	2,360	136	779	46,400	A.
May.....	245	13	56.7	3,490	A.
June.....	168	1.5	47.3	2,810	B.
July.....	2.8	.0	.3	18	C.
August.....	.0	.0	0	0	
September.....	.0	.0	0	0	
The year.....	2,360	0	112	81,200	
1906-7.					
October.....	.0	.0	.0	0	
November.....	1.5	.0	.6	36	C.
December.....	685	1.5	68.1	4,190	A.
January.....	464	1.7	24.3	1,490	B.
February.....	6,730	138	1,020	56,600	A.
March.....	2,060	138	543	33,400	A.
April.....	1,500	59	448	26,700	B.
May.....	60	9.5	39.0	2,400	A.
June.....	90	1.5	26.6	1,580	B.
July.....	1.3	.0	.17	10.4	C.
August.....	.0	.0	.00	0	
September.....	.0	.0	.00	0	
The year.....	6,730	0	181	126,000	
1907-8.					
October.....	5	.0	.80	49.2	C.
November.....	5	1.7	3.02	180	C.
December.....	490	1.7	71.9	4,420	B.
January.....	206	16.6	95.4	5,870	B.
February.....	25	.3	10.1	581	C.
March.....	290	28	123	7,560	B.
April.....	46	1.7	17.5	1,040	B.
May.....	35	.0	13.9	855	B.
June.....	7.0	.0	.39	23	C.
July.....	.0	.0	.00	0	
August.....	.0	.0	.00	0	
September.....	.0	.0	.00	0	
The year.....	490	.0	28.0	20,600	
1908-9.					
October.....	.0	.0	.00	0	D.
November.....		.0	.48	29	D.
December.....			.56	34	D.
January.....			204	12,500	D.
February.....			242	13,400	D.
March.....			387	23,800	C.
April.....			254	15,100	C.
May.....	40	5.6	16.1	990	B.
June.....	26	3.9	9.56	569	B.
July.....	4.4	1.5	2.16	133	C.
August.....	4.0	2.7	3.21	197	C.
September.....	2.5	1.0	1.47	87	C.
The year.....			93.4	66,800	

Monthly discharge of Miller Creek near Lorella, Oreg., for 1904-1910—Continued.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909-10.					
October	6.0	1.3	2.51	154	C.
November.....	2,200	6	293	17,400	C.
December.....	34	7	23.9	1,470	C.
January.....	820	2	92.6	5,690	C.
February.....	1,060	11	82.3	4,570	B.
March.....	2,620	131	705	43,300	A.
April.....	148	1	34.1	2,030	B.
May.....	18	0	6.5	400	C.
June.....	8	2	4.1	244	C.
July.....	3	2	2.4	148	C.
August.....	3	2	2.4	148	C.
September.....	4	2	2.7	161	C.
The year.....	2,620	0	104	75,700	

GOOSE LAKE DRAINAGE BASIN.

GENERAL FEATURES.

Goose Lake is situated in the northern part of Modoc County, Cal., and southern part of Lake County, Oreg., about two-thirds of the lake being in California, but by far the greater part of the valley being in Oregon. The lake lies 4,800 feet above sea level, is about 28 miles long, 10 miles in maximum width, and not more than 20 feet in maximum depth. It is fed by 16 streams in California, draining an aggregate of about 250 square miles, and 6 streams in Oregon. It probably receives also a large supply of water from subsurface springs. The annual rainfall on the open surface of the lake has been estimated at 14 inches.

It is said that in the early sixties an emigrant trail crossed the valley of the creek at a place where the water is now several feet deep, but a few years later the lake rose so as to extend several miles farther north than it now extends, and for a short time in 1869 it overflowed southward to the north fork of Pit River. In 1881 it is reported to have overflowed to Pit River for more than 2 hours during a severe storm from the north. Along the northern edge of the lake are considerable areas of marsh hay lands, but farther north the valley is an unreclaimed sagebrush desert except for a few homesteads. The lower end of the lake is bordered by lava beds through which some water may be lost by percolation.

The water of Goose Lake is slightly alkaline, though considerably less so than that of other lakes in the vicinity.

Drews Creek, Cottonwood Creek, and Thomas Creek, the principal streams flowing into the basin in Oregon, drain the southeast slope of a high timbered ridge near the southern corner of Lake County. The water of Drews Creek is utilized by the Goose Lake Valley Irrigation Co. for the reclamation of 40,000 acres of land in the Goose

Lake Valley. A storage reservoir of 60,000 acre-feet capacity has been constructed on Drews Creek about 5 miles above the mouth of the river canyon.

From this reservoir an irrigation ditch has been constructed which carries water along the borders of the valley both north and south of Drews Creek. A northern branch wastes into Thomas Creek near the city of Lakeview. There is also a good storage site on Cottonwood Creek. The flow of Cottonwood Creek is well maintained throughout the year, but Drews Creek is more flashy.

COTTONWOOD CREEK NEAR LAKEVIEW, OREG.

Location.—In sec. 29, T. 38 S., R. 19 E., at a dam site 10 miles northwest of Lakeview.

Records presented.—November 22, 1908, to September 30, 1910.

Drainage area.—30 square miles.

Gage.—Inclined staff; gage just above a weir at dam site used November 22, 1908, to January 18, 1909.

Channel.—Clean gravel; fairly permanent; 10-foot weir November 22, 1908, to January 16, 1909; 15-foot weir January 17 and 18, 1909.

Discharge measurements.—Made from a footbridge 40 feet below present gage; low-stage measurements made by wading near gage.

Winter flow.—Gage heights at times affected by ice, but winter flow is so small that no serious errors are introduced into the estimates.

Diversions.—None above station.

Accuracy.—Conditions excellent and results fairly reliable except when large diurnal fluctuations are caused by melting snow during the early spring.

Cooperation.—Station maintained in cooperation with Goose Lake Valley Irrigation Co., which furnishes gage-height record.

Discharge measurements of Cottonwood Creek near Lakeview Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 7	R. B. Post.....	1.88	118	May 17	L. R. Allen.....	0.85	32
				Sept. 28	Allen and Davenport..	.15	2.1

Daily gage height, in feet, and discharge, in second-feet, of Cottonwood Creek at weir near Lakeview, Oreg., for 1908-9.

[O. W. Theis, observer.]

Day.	November.		December.		January.		Day.	November.		December.		January.	
	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.		Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
1908-9.							1908-9.						
1.....			0.20	3.0	0.20	3.0	16.....			0.17	2.4	2.65	145
2.....			.19	2.8	.22	3.5	17.....			.17	2.4	2.35	133
3.....			.14	1.9	.32	6.1	18.....			.16	2.0	2.20	121
4.....			.19	2.8	.30	5.5	19.....			.15	2.0		
5.....			.24	4.1	.28	5.0	20.....			.15	2.0		
6.....			.25	4.2	.32	6.1	21.....			.16	2.0		
7.....			.20	3.0	.38	7.9	22.....	0.30	5.5	.17	2.4		
8.....			.22	3.6	.30	5.5	23.....	.29	5.2	.16	2.0		
9.....			.22	3.6	.30	5.5	24.....	.25	4.2	.16	2.0		
10.....			.22	3.2	.30	5.5	25.....	.24	3.9	.16	2.0		
11.....			.20	3.0	.26	4.5	26.....	.19	2.7	.19	2.7		
12.....			.26	4.2	.29	5.3	27.....	.20	3.0	.20	3.0		
13.....			.19	3.0	.30	5.5	28.....	.27	4.5	.20	3.0		
14.....			.16	2.2	.31	5.8	29.....	.21	3.3	.20	3.0		
15.....			.18	2.5	1.04	35.7	30.....	.22	3.6	.18	2.6		
							31.....			.20	3.0		

NOTE.—Crest of weir 10 feet long Nov. 22, 1908, to Jan. 16, 1909, and 11 feet long Jan. 17-18, 1909. As no allowance was made for probable leakage through weir, values may be somewhat too small.

Daily gage height, in feet, of Cottonwood Creek near Lakeview, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.					0.60	0.79	1.75	1.65	1.65	0.72	0.32	
2.					.60	.89	1.80	1.80	1.80	.72		
3.					.55	1.03	1.68	2.00	1.85	.72		
4.					.60	1.62	1.41	2.20	1.85	.68	.30	0.15
5.					.60	.96	1.40	2.25	1.82	.65		.15
6.					.60	.82	1.48	1.95	1.70	.65		.15
7.					.55	.83	1.40	1.88	1.52	.70		
8.					.52	.72	1.45	1.80	1.52	.62	.25	
9.					.48	.65	1.60	1.85	1.42	.62	.25	
10.					.50	.66	1.48	1.75	1.35	.60	.25	
11.					.50	.65	1.65	1.60	1.30	.60	.22	.10
12.					.55	.62	1.65	1.55	1.30	.55	.20	.10
13.					.64	.80	2.00	1.50	1.22	.50	.20	.12
14.					.55	1.12	2.00	1.45	1.25	.52	.20	.12
15.					.58	1.61	1.92	1.45	1.20	.50	.20	.12
16.					.82	1.54		1.45	1.22	.48		.12
17.					1.88	1.49	2.10	1.42	1.20	.48		.12
18.					1.22	1.26	2.05	1.40	1.15	.45	.18	.10
19.				2.50	1.12	1.15	1.90	1.38	1.28	.45		.10
20.				2.98	1.00	1.05	1.80	1.42	1.20	.42		.10
21.				3.10	.75	1.05	1.72	1.40	1.10	.40		.12
22.				2.12	1.02	1.02	1.72	1.40	1.00	.42	.15	.15
23.				1.62	1.00	.92	1.68	1.38	.98	.40		.15
24.				1.41	.62	.96	1.65		.90	.38		.15
25.				1.18	.59	1.06	1.72	1.40	.88	.40	.15	.20
26.				1.08	.65	1.16	2.00	1.40	.82	.40		.20
27.				1.10	.65	1.20	2.08	1.60	.80			.20
28.				1.22	.66	1.28	1.90	1.60	.80	.35		.22
29.				1.65		1.22	1.80	1.50	.82	.35	.15	.22
30.				1.50		1.22	1.75	1.42	.80	.32		.22
31.				1.00		1.87		1.40		.32	.15	
1909-10.												
1.	0.20	0.25	0.85	.68	.50		1.42	1.35	.60	.48	.10	.20
2.	.20	.25	.80	.45	1.00	2.60	1.48	1.32	.60	.42	.12	.20
3.	.25	.30	.85	.60	1.60	2.45	1.50	1.35	.60	.40	.10	.18
4.	.22	.25	1.10	.75	1.65	2.28	1.65	1.30	.55	.38	.10	.18
5.	.20	.25	1.00	.62	1.00	2.25	1.70	1.15	.50	.38	.12	.18
6.	.18	.25	.90	.80	.80	2.00	1.42	1.10	.58	.38	.12	.20
7.	.18	.25	.80	.75	.70	1.70	1.48	1.10	.55	.35	.12	.18
8.	.18	.22	.75	.60	.65	1.52	1.50	1.08	.58	.35	.15	.20
9.	.15	.25	.75	.50	.55	1.50	1.65	1.10	.55	.35	.15	.20
10.	.15	.25	.70	.50	.55	1.85	1.72	1.08	.55	.35	.18	.20
11.	.15	.35	.65	.40	.52	1.85	1.62	1.05	.52	.39	.20	.18
12.	.15	.35	.65	.40	.55	1.95	1.78	1.02	.55	.25	.12	.18
13.	.12	.35	.62	.42	.62	2.10	1.65	1.02	.52	.25	.18	.18
14.	.12	.60	.45	.45		2.20	1.72	1.00	.52	.22	.15	.20
15.	.12	.78			.50		1.65	1.02	.55	.22	.18	.20
16.	.12	.88	.55		.48	2.00	1.62	1.02	.55	.22	.18	.20
17.	.12	.50	.52	.45	.48	2.10	1.72	1.05	.52	.22	.18	.20
18.	.15	.52	.50	.42	.45	2.40	1.75	.98	.50	.22	.15	.22
19.	.20	.70	.50	.45	.48	2.60	1.70	.92	.50	.20	.18	.25
20.	.20	1.90	.52	.32	.50	2.50	1.68	.88	.52	.20	.18	.28
21.	.18	2.00	.60	.35	.42	2.00	1.60	.80	.52	.20	.15	.28
22.	.18	2.00	.65	.95	.45	1.50	1.62	.75	.55	.18	.18	.25
23.	.15	3.40	.68	2.00	.48	1.55	1.65	.80	.52	.15	.15	.25
24.	.15	3.00	.70	1.80	.50	1.40	1.62	.78	.50	.15	.12	.25
25.	.15	1.60	.75	1.50	.50	1.30	1.65	.72	.50	.12	.18	.25
26.	.15	1.20	.70	1.30	.55	1.30	1.60	.72	.48	.12	.15	.25
27.	.15	1.00	.70	1.00	.55	1.28	1.68	.70	.48	.10	.18	.20
28.	.20	.90	.60		1.45	1.20	1.45	.68	.45	.10	.15	.20
29.	.20	.90	.55			1.22	1.40	.72	.42	.10	.20	.18
30.	.22		.50	.65		1.20	1.42	.68	.40	.10	.19	.20
31.	.22		.90	.65		1.18		.65		.10	.18	

Daily discharge, in second-feet, of Cottonwood Creek near Lakewood, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1					18	29	109	99	99	25	7	2
2					18	35	114	114	114	25	7	2
3					16	45	102	135	119	25	6	2
4					18	96	76	158	119	23	6	2
5					18	40	75	164	116	21	6	2
6					18	31	82	130	104	21	5	2
7					16	32	75	122	86	24	4	2
8					14	25	80	114	86	19	4	2
9					12	21	94	119	77	19	4	1
10					13	22	82	109	70	18	4	1
11					13	21	99	94	66	18	4	1
12					16	19	99	89	66	16	3	1
13					20	30	135	84	60	13	3	2
14					16	52	135	80	62	14	3	2
15					17	95	126	80	58	13	3	2
16					31	88	136	80	60	12	3	2
17					122	83	146	77	58	12	3	2
18					60	63	140	75	54	11	3	1
19				196	52	54	124	73	64	11	3	1
20				267	43	46	114	77	58	10	3	1
21				286	27	46	106	75	50	9	2	2
22				148	44	44	106	75	43	10	2	2
23				96	43	37	102	73	42	9	2	2
24				76	19	40	99	74	36	8	2	2
25				56	18	47	106	75	35	9	2	3
26				49	21	55	135	75	31	9	2	3
27				50	21	58	144	94	30	8	2	3
28				60	22	64	124	94	30	8	2	4
29				99		60	114	84	31	8	2	4
30				84		60	109	77	30	7	2	4
31				43		121		75		7	2	
1909-10.												
1	3	4	33	23	13	230	77	70	18	12	1	3
2	3	4	30	11	43	210	82	68	18	10	2	3
3	4	6	33	18	94	190	84	70	18	9	1	3
4	4	4	50	27	99	168	99	66	16	8	1	3
5	3	4	43	19	43	164	104	54	13	8	2	3
6	3	4	36	30	30	135	77	50	17	8	2	3
7	3	4	30	27	24	104	82	50	16	8	2	3
8	3	4	27	18	21	86	84	49	17	8	2	3
9	2	4	27	13	16	84	99	50	16	8	2	3
10	2	4	24	13	16	119	106	49	16	8	3	3
11	2	8	21	9	14	119	96	46	14	6	3	3
12	2	8	21	9	16	130	112	44	16	4	2	3
13	2	8	19	10	19	146	99	44	14	4	3	3
14	2	18	11	11	16	158	106	43	14	4	2	3
15	2	29	14	11	13	146	99	44	16	4	3	3
16	2	35	16	11	12	135	96	44	16	4	3	3
17	2	13	14	11	12	146	106	46	14	4	3	3
18	2	14	13	10	11	183	109	42	13	4	2	3
19	3	24	13	11	12	210	104	37	13	3	3	4
20	3	124	14	7	13	196	102	35	14	3	3	5
21	3	135	18	8	10	135	94	30	14	3	2	5
22	3	135	21	40	11	84	96	27	16	3	3	4
23	2	337	23	135	12	89	99	30	14	2	2	4
24	2	270	24	114	13	75	96	29	13	2	2	4
25	2	94	27	84	13	66	99	25	13	2	3	4
26	2	58	24	66	16	66	94	25	12	2	2	4
27	2	43	24	43	16	64	92	24	12	1	3	3
28	3	36	18	36	80	58	80	23	11	1	2	3
29	3	36	16	28		60	75	25	10	1	3	3
30	4	34	13	21		58	77	23	9	1	3	3
31	4		36	16		56		21		1	3	

NOTE.—Daily discharge determined from a rating curve fairly well defined below 150 second-feet; Mar. 1, 1910, estimated by comparison with Drews Creek.

Monthly discharge of Cottonwood Creek near Lakeview, Oreg., for 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1908-9.					
November 22-30.....	5.5	2.7	3.99	71	C.
December.....	4.2	1.9	2.76	170	C.
January.....	286	3	65.1	4,000	C.
February.....	122	12	27.4	1,520	B.
March.....	121	19	50.3	3,090	B.
April.....	146	75	110	6,550	C.
May.....	164	73	95.0	5,840	B.
June.....	119	30	65.1	3,870	B.
July.....	25	7	14.3	879	B.
August.....	7	2	3.4	209	B.
September.....	4	1	2.1	125	C.
The period.....				26,300	
1909-10.					
October.....	4	2	2.6	160	B.
November.....	337	4	50.0	2,980	B.
December.....	50	11	23.6	1,450	C.
January.....	135	7	28.7	1,760	C.
February.....	99	10	25.3	1,410	C.
March.....	^a 230	56	125	7,690	C.
April.....	112	75	94.2	5,610	B.
May.....	70	21	41.4	2,550	B.
June.....	18	9	14.4	857	B.
July.....	12	1	4.7	289	B.
August.....	3	1	2.4	148	C.
September.....	5	3	3.3	196	B.
The year.....	337	1	34.6	25,100	

^a Estimated; may be too small.

DREWS CREEK NEAR LAKEVIEW, OREG.

Location.—In sec. 4, T. 40 S., R. 18 E., 1 mile below the Drews Creek dam, 13 miles southwest of Lakeview.

Records presented.—January 16, 1909, to September 30, 1910.

Drainage area.—211 square miles.

Gage.—Vertical staff at highway bridge installed March 1, 1910. Two gages had previously been used—inclined staff at station No. 1, at the dam site, January 16 to May 31, 1909, and vertical staff at station No. 2, at a dump-car bridge 100 feet below the dam site, November 20, 1909, to February 28, 1910.

Channel.—Gravel; not likely to shift; at highest stages stream overflows into a second channel.

Discharge measurements.—Made from a wagon bridge near the gage or by wading.

Winter flow.—Winters are severe at this station, but the flow is so small that very little error is introduced in the estimates as a whole.

Accuracy.—Records subject to considerable error on account of diurnal fluctuation. Present conditions favorable for good results; conditions at station No. 2 were very poor.

Cooperation.—This station is maintained by the Goose Lake Valley Irrigation Co. (successor to the Oregon Valley Land Co.), which furnishes the records to the Survey.

Discharge measurements of Drews Creek near Lakeview, Oreg. in 1909-10.

Station No. 1.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1909.		<i>Feet.</i>	<i>Sec.-ft.</i>
Feb. 15	J. G. Allen.....	0.98	162	Mar. 9	R. F. Stripling.....	0.66	108
16	do.....	3.93	830	14	do.....	1.16	194
17	do.....	3.55	717	17	do.....	2.90	547
18	do.....	2.96	536	22	do.....	1.41	224
19	do.....	1.37	213	27	do.....	1.80	312
21	do.....	1.07	164	29	do.....	2.06	356
22	do.....	1.14	180	Apr. 1	do.....	2.67	489
26	do.....	.68	100	3	C. C. Gott.....	3.45	679
28	R. F. Stripling.....	1.00	156	9	do.....	2.77	516
Mar. 3	do.....	1.65	269	10	R. F. Stripling.....	3.20	621
4	do.....	2.60	433	25	J. G. Allen.....	2.00	308
6	do.....	1.10	165	May 6	R. B. Post.....	1.40	230
8	do.....	1.10	167				

Station No. 2.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1900.				1910.			
Nov. 23	C. W. Watson.....	9.00	1,110	Jan. 25	W. J. Archer.....	8.36	1,330
24	W. J. Archer.....	7.00	706				
26	do.....	4.25	229				
Dec. 9	do.....	3.50	72				

Station No. 3.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1910.				1910.			
Mar. 21	W. J. Archer.....	5.00	692	May 17	L. R. Allen.....	2.25	25.8
30	do.....	3.75	285	17	W. J. Archer.....	2.26	28.5
Apr. 7	do.....	3.60	264	Dec. 11	H. W. Fraim.....	4.28	440
19	do.....	3.10	150	12	do.....	3.58	270
25	do.....	2.85	86				

Daily gage height, in feet, of Drews Creek near Lakeview, Oreg., for 1909-10.

Day.	Jan.	Feb.	Mar.	Apr.	May.	Day.	Jan.	Feb.	Mar.	Apr.	May.
1909.						1909.					
1.....		0.9	1.45	2.7	1.6	16.....	8.3	3.2	2.4	3.4	0.65
2.....		1.1	1.75	2.95	1.55	17.....	6.5	3.9	2.65	3.5	.7
3.....		1.35	1.95	3.3	1.6	18.....	5.1	2.8	1.8	3.2	.55
4.....		.95	2.6	2.55	1.55	19.....	5.2	1.5	1.8	3.1	.55
5.....		.6	1.45	2.2	1.55	20.....	6.65	1.15	1.4	2.7	.4
6.....		.8	1.5	2.0	1.55	21.....	7.3	1.1	1.35	2.4	.55
7.....		.6	1.0	2.0	1.35	22.....	2.0	.7	1.4	2.2	.6
8.....		.5	1.1	2.25	1.2	23.....	3.05	1.0	1.35	2.1	.6
9.....		.4	.5	2.75	1.2	24.....	2.45	1.0	1.4	1.95	.45
10.....		.45		3.1	1.05	25.....	2.2	.85	1.35	2.0	.3
11.....		.4		2.85	1.0	26.....	1.6	.7	1.45	2.05	.25
12.....		.5	.6	3.05	.9	27.....	1.25		1.85	2.15	.5
13.....		.8	.75	3.5	.85	28.....	2.25	1.0	2.05	2.2	.7
14.....		.85	1.25	3.5	.7	29.....	1.5		2.05	1.9	.75
15.....		1.0	1.75	3.5	.7	30.....	1.1		1.5	1.8	.55
						31.....	.85		2.0		.45

Daily gage height, in feet, of Drews Creek near Lakeview, Oreg., for 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.			4.4	2.9	3.55	7.5	4.0	2.9	2.0			
2.			3.85	2.9	3.5			2.9				
3.			3.55	2.9	3.5	6.8		2.9				
4.			3.15	2.8	3.4	5.55	3.8	3.0				
5.				2.8	3.0	5.45	3.75	3.0				
6.			3.15	2.7	3.0	4.9	3.75	2.9	1.8			
7.			3.0	2.6	3.0	4.85	3.7	2.75				
8.			3.1	2.65	3.0	4.7	3.7	2.65				
9.			3.4	2.65	3.0	4.6	3.7	2.6				
10.			3.5	2.65	3.0	4.8	3.7	2.6				
11.			4.5	2.65	3.0	4.75	3.7	2.6				
12.			4.45	2.65	3.0	4.9	3.55	2.6				
13.			4.5	2.65	3.1	6.4	3.35	2.55				
14.			3.55	2.65	3.4	5.3	3.3	2.4				
15.			3.2	2.65	3.25	5.8	3.2	2.4				
16.			3.1	2.65	3.1		3.2	2.3				
17.			3.0	2.65	3.1	5.6	3.2	2.25				
18.			2.95	2.65	3.1	5.6	3.15	2.25				
19.			2.95	2.65	3.05	6.8	3.1	2.2				
20.		3.0	2.9	2.65	3.0	5.4	3.1	2.2				
21.	7.0	2.8	2.65	3.0	5.05			2.2				
22.	7.0	2.8	3.4	3.0	4.95		3.0	2.15				
23.	9.0	2.65	4.4	3.0	4.85		2.95	2.1				
24.	7.0		5.35	4.35	4.45		2.9	2.1				
25.	5.15		8.9	4.6	4.2		2.85	2.1				
26.	4.3	2.75	4.2	4.2	4.3		2.8	2.1				
27.	3.45	2.65	3.65	4.0	4.0		2.8	2.05				
28.	3.85	2.65	3.6	6.4	3.95		2.8	2.05				
29.		2.65					3.8	2.9				
30.		4.1	2.7	3.65			3.8	2.9	2.0			
31.			2.9	3.65			3.8	2.0				

NOTE.—Gage heights, Jan. 16 to May 31, 1909, observed at station No. 1. Creek dry from about Aug. 1 to Oct. 1, 1909.

Gage heights, Nov. 20, 1909, to Feb. 28, 1910, observed at station No. 2; subsequent to Feb. 28, 1910, gage heights observed at station No. 3. Creek dry about July 1 to Sept. 30, 1910.

Daily discharge, in second-feet, of Drews Creek near Lakeview, Oreg., for 1909-10.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1909.								
1.			10	140	229	482	256	
2.			10	172	283	547	247	
3.			10	212	320	640	256	
4.			10	148	458	446	247	
5.			10	98	229	370	247	
6.			10	126	238	330	247	
7.			10	98	156	330	212	
8.			10	86	172	380	188	
9.			10	74	86	495	188	
10.			10	80	90	586	164	
11.			10	74	94	521	156	
12.			10	86	98	573	140	
13.			10	126	119	696	133	
14.			50	133	196	696	112	
15.			500	156	283	696	112	
16.			2,730	612	412	668	105	
17.			1,830	818	470	696	112	
18.			1,240	508	292	612	92	
19.			1,280	238	292	586	92	
20.			1,900	180	220	482	74	
21.			2,230	172	212	412	92	
22.			330	112	220	370	98	
23.			573	156	212	350	98	
24.			423	156	220	320	80	
25.			370	133	212	330	62	
26.			256	112	229	340	57	
27.			196	134	301	360	86	
28.			380	156	340	370	112	
29.			238		340	310	119	
30.			172		238	292	92	
31.			133		330		80	

Daily discharge, in second-feet, of Drews Creek near Lakeview, Oreg., for 1909-10—Con.

Day.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.
1909-10.								
1.....		228	28	90	1,850	370	106	12
2.....		135	28	83	1,680	351	106	
3.....		90	28	83	1,500	333	106	
4.....		45	22	70	910	314	124	
5.....		45	22	34	870	300	124	
6.....		45	17	34	656	300	106	5
7.....		34	13	34	639	286	82	
8.....		41	15	34	590	286	68	
9.....		70	15	34	558	286	62	
10.....		83	15	34	622	286	62	
11.....		277	15	34	606	286	62	
12.....		266	15	34	656	247	62	
13.....		277	15	41	1,300	199	56	
14.....		90	15	70	810	188	41	
15.....		49	15	54	1,010	166	41	
16.....		41	15	41	970	166	32	
17.....		34	15	41	930	165	28	
18.....		31	15	41	930	155	28	
19.....		31	15	38	1,500	144	24	
20.....	34	28	15	34	850	144	24	
21.....	710	22	15	34	710	134	24	
22.....	710	22	70	34	673	124	20	
23.....	1,110	15	256	34	639	115	17	
24.....	710	16	470	246	510	106	17	
25.....	357	18	1,510	298	430	98	17	
26.....	211	20	214	214	462	90	17	
27.....	76	15	105	172	370	90	14	
28.....	135	15	97	742	356	90	14	
29.....	156	15	101		314	106	13	
30.....	177	17	105		314	106	12	
31.....		28	105		314		12	

NOTE.—Daily discharge computed by engineers of United States Geological Survey, chiefly from data furnished by the Lakeview Irrigation & Power Co. Discharge Jan. 1-15, 1909, estimated by comparison with records of Cottonwood Creek. Discharge Jan. 16 to May 31, 1909 (station No. 1), determined from rating curve well defined between 100 and 900 second-feet. Discharge Nov. 20 to Dec. 3, 1909 (station No. 2), determined from a curve fairly well defined between 500 and 1,200 second-feet; uncertain below 500 second-feet; discharge Dec. 4, 1909, to Feb. 23, 1910 (station No. 2), obtained from a curve fairly well defined between 70 and 1,500 second-feet; approximate below 50 second-feet. Discharge Mar. 1 to Sept. 30, 1910, determined from a rating curve well defined below 1,200 second-feet. Daily discharge for days on which gage was not read interpolated or roughly estimated from the record of discharge of Cottonwood Creek. No correction for effect of ice.

Monthly discharge of Drews Creek near Lakeview, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
January.....	2,730	10	483	29,700	C.
February.....	818	74	189	10,500	B.
March.....	470	86	245	15,100	B.
April.....	696	292	476	28,300	B.
May.....	256	57	141	8,670	B.
June.....			45.0	2,680	
July.....		0	4.0	246	
August.....	0	0	.0	0	
September.....	0	0	.0	0	
The period.....				95,200	
1909-10.					
October.....			2.0	123	
November.....	1,110		148	8,810	C.
December.....	277	15	69.1	4,250	C.
January.....	1,510	15	110	6,760	D.
February.....	742	34	97.6	5,420	C.
March.....	1,859	314	791	48,600	C.
April.....	370	90	201	12,000	B.
May.....	124	12	49.1	3,020	B.
June.....	12	0	4.1	244	
July.....	0	0	.0	0	
August.....	0	0	.0	0	
September.....	0	0	.0	0	
The year.....	1,850	0	123	89,200	

NOTE.—Monthly means for low-water periods in 1909 and 1910 estimated by comparison with Cottonwood Creek records. They are only approximate but do not introduce any appreciable error in the yearly total.

Accuracy rating lowered by diurnal fluctuation.

GREAT BASIN DRAINAGE IN OREGON.

GENERAL FEATURES.

In Oregon, as in other parts of the Great Basin, the surface waters collect in natural depressions in the ground. Where the flow into these depressions is sufficient perennial lakes are formed of such extent that evaporation balances the inflow; where the surface flow is insufficient, intermittent lakes or playas are formed. The principal lakes in the Great Basin in Oregon are Warner, Abert, Summer, Silver, Malheur, and Harney. Except Silver Lake in Lake County and the three southerly of the Warner lakes, all these lakes are more or less alkaline.

WARNER LAKE DRAINAGE BASIN.

GENERAL FEATURES.

Warner Lake includes a chain of lakes and marshes extending in a general north-south direction between two high escarpments in the southeastern part of Lake County. The waters of these lakes flow from south to north and the lakes in the southern end of the valley are therefore fresh whereas those at the northern end are alkaline. The larger lakes in the area, from north to south, are Crump Lake, Hart Lake, Flagstaff Lake, and Bluejoint Lake. The general elevation of the water surface is about 4,460 feet.

Protected by the high ridges that border it on both sides, Warner valley has reached a fairly high stage of agricultural development. At the base of the hills bordering the western shores of Hart and Crump lakes are a number of prosperous ranches whose products include fruit, grains, and nearly all agricultural crops.

The principal streams in this basin are Twentymile Creek flowing from the south; Deep Creek, formerly called Warner Creek, flowing from the west; and Honey Creek, flowing from the west. These streams drain a high, practically timberless ridge, but the flow of the streams is well maintained during the summer months. Deep Creek is the most important of these streams and Honey Creek is the next, though Twentymile Creek furnishes about the same amount of water as Honey Creek. All three are used more or less for irrigation, and any additional development will require construction of storage reservoirs on their headwaters.

Around the west side and north end of the valley is a large area of agricultural land which is now growing sagebrush. The Warner Lake Irrigation Co. has under contemplation the irrigation of these lands by water stored on the headwaters of Warner and Honey creeks. The project is to be developed under the provision of the Carey Act.

TWENTYMILE CREEK NEAR WARNER LAKE, OREG.

Location.—In sec. 24, T. 40 S., R. 23 E., about one-fourth mile above the bridge at the mouth of the canyon, about 2 miles south of Warner Lake post office. Below all tributaries.

Records presented.—March 1 to September 30, 1910.

Drainage area.—About 169 square miles, including area tributary to Cowhead Lake, which overflows only occasionally.

Gage.—Vertical staff in two sections about one-fourth mile above the bridge and above a fall in the stream. A gage at the bridge was read during March and April, but as the discharge relation was affected by backwater from a dam below, it was removed to the present site. So far as possible, however, all gage readings referred to the present gage have been reduced to the same datum.

Channel.—Boulders and gravel; probably shifts slightly.

Discharge measurements.—Made from highway bridge or by wading.

Winter flow.—Creek freezes over at gage but practically always remains open at rock control below.

Diversions.—Only a small amount of water diverted above the station.

Artificial control.—Backwater from a diversion dam below the bridge may reach the gage, but did not in 1910.

Accuracy.—Gage heights show marked diurnal fluctuations at times during the spring, thus causing considerable inaccuracy in the records.

Cooperation.—Station maintained in cooperation with Warner Lake Irrigation Co.

Discharge measurements of Twentymile Creek near Warner Lake, Oreg., for 1910.

Lower gage.				Upper gage.			
Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
		<i>Feet.</i>	<i>Sec.-ft.</i>			<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 1	Warner Lake Irrigation Co.	4.80	2,610	May 19	Stevens and Allen.....	1.62	55
7	do.	1.80	396	June 13	Warner Lake Irrigation Co.	1.30	33
10	do.	1.60	328	14 ^b	do.	.85	19
24	do.	1.30	157	23 ^b	do.	.48	11.6
24	do.	1.40	179	July 8 ^b	do.	.11	5.7
May 19	Stevens and Allen.....	^a 1.73	55	Sept. 30 ^b	Allen and Davenport...	.12	3.9

^a Gage height affected by backwater from dam.

^b Measured by wading.

Daily gage height, in feet, of Twentymile Creek near Warner Lake, Oreg., for 1910.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....	4.8	1.2	.....	.....	0.2	0.0	-0.1
2.....	4.2	.....	.....	.....	.2	.0	-.1
3.....	3.0	.....	.....	1.3	.05	.0	-.1
4.....	2.3	1.1	.....	1.2	.05	.0	-.1
5.....	2.2	1.0	.....	1.2	.05	.0	-.1
6.....	1.9	1.1	.....	1.15	.2	.0	-.1
7.....	1.8	1.1	.....	1.1	.1	.0	-.1
8.....	1.7	1.2	.....	1.05	.1	.0	.0
9.....	1.7	1.1	.....	.95	.1	-.1	.0
10.....	1.7	1.1	.....	.9	.05	-.15	-.05
11.....	1.8	1.1	.....	.9	-.1	-.15	-.05
12.....	1.7	1.1	.....	.9	-.1	-.15	-.05
13.....	1.7	1.1	.....	.85	-.15	-.1	-.05
14.....	1.6	1.0	.....	.8	-.05	-.1	-.05
15.....	1.6	1.0	.....	.8	.0	-.15	-.05
16.....	1.7	1.0	.....	.8	.1	-.1	.2
17.....	1.8	1.0	.....	.8	.05	-.1	.05
18.....	1.7	1.1	.....	.7	-.05	-.1	.05
19.....	1.9	1.1	.....	.65	-.05	-.1	.1
20.....	1.8	.....	.....	.6	.2	-.2	.1
21.....	1.7	.....	.....	.5	.1	-.2	.2
22.....	1.7	.....	.....	.5	.05	-.1	.2
23.....	1.5	.....	.....	.5	.0	-.1	.1
24.....	1.3	.....	.....	.4	.0	-.2	.1
25.....	1.4	.....	.....	.4	.0	-.2	.1
26.....	1.4	.....	.....	.35	.0	-.2	.1
27.....	1.4	.....	.....	.35	.0	-.2	.1
28.....	1.2	.....	.....	.3	.1	-.2	.1
29.....	1.1	.....	.....	.25	.1	-.1	.1
30.....	1.2	.....	.....	.25	.05	-.1	.1
31.....	1.1	.....	.....	.....	.0	-.1	.....

NOTE.—Readings for March and April made at the bridge (lower) gage; those beginning in June at the upper gage. Readings on bridge gage after Apr. 19 discarded, as they indicate backwater from the diversion dam below. Probably no ice at this station during period covered by records. Readings for Mar. 1 and 2 may have been made in the afternoon and are probably higher than the true daily mean.

Daily discharge, in second-feet, of Twentymile Creek near Warner Lake, Oreg., for 1910.

Day.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1.....	2,610	134	112	36	7	5	4
2.....	2,020	134	99	35	7	5	4
3.....	1,020	134	99	34	5.5	5	4
4.....	600	115	99	30	5.5	5	4
5.....	550	98	87	30	5.5	5	4
6.....	432	115	73	28	7	5	4
7.....	396	115	62	26	6	5	4
8.....	362	134	62	24	6	5	5
9.....	362	115	62	22	6	4	5
10.....	362	115	91	20	5.5	3.5	4.5
11.....	380	115	91	20	4	3.5	4.5
12.....	350	115	80	20	4	3.5	4.5
13.....	350	115	80	19	3.5	4	4.5
14.....	300	98	80	18	4.5	4	4.5
15.....	300	98	70	18	5	3.5	4.5
16.....	330	98	70	18	6	4	4
17.....	350	98	62	18	5.5	4	2.5
18.....	320	115	55	16	4.5	4	2.5
19.....	390	115	55	15	4.5	4	3
20.....	340	148	55	14	7	3	3
21.....	310	126	55	12	6	3	4
22.....	310	118	50	12	5.5	4	4
23.....	260	118	48	12	5	4	3
24.....	156	118	48	10	5	3	3
25.....	180	129	48	10	5	3	3
26.....	180	139	48	9	5	3	3
27.....	180	132	48	9	5	3	3
28.....	134	123	46	8	6	3	3
29.....	115	109	42	7.5	6	4	3
30.....	134	118	38	7.5	5.5	4	3
31.....	115	-----	37	-----	5	4	-----

NOTE.—Daily discharge determined as follows: Mar. 1 to 10, from a fairly well defined discharge rating curve; Mar. 11 to 23, by indirect method for shifting channels; Mar. 24 to Apr. 19, from a poorly defined curve; Apr. 20 to June 2, by means of a hydrograph drawn through the measurement of May 19 and following the rise and fall of Deep Creek near Adel; June 3 to Sept. 15, from a curve well defined above 5 second-feet; Sept. 16 to 30, from a rating curve well defined (by measurement of Sept. 30, 1910, and measurements in 1911) between 3 and 600 second-feet.

Determinations for the early part of March, especially the first two days, are liable to considerable error, resulting from reading the gage but once daily during a time when there was considerable diurnal fluctuation.

Monthly discharge of Twentymile Creek near Warner Lake, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
March.....	2,610	115	458	28,200	C.
April.....	148	98	118	7,020	C.
May.....	112	37	66.2	4,070	C.
June.....	36	7.5	18.6	1,110	B.
July.....	7	3.5	5.44	334	B.
August.....	5	3	3.97	244	C.
September.....	4.5	2.5	3.73	222	C.
The period.....	-----	-----	-----	41,200	-----

DEEP CREEK ¹ AT ADEL, OREG.

Location.—In the SE. $\frac{1}{4}$ NW. $\frac{1}{4}$ sec. 21, T. 39 S., R. 24 E., about one-eighth mile above the wagon bridge crossing the creek at Adel; below all tributaries.

Records available.—May 11, 1909, to September 30, 1910.

Drainage area.—About 260 square miles.

Gage.—Vertical staff in two sections about 500 feet above the bridge and above a series of rapids; datum unchanged. A second gage installed at the bridge February 23, 1910, by the Warner Lake Irrigation Co. was at times affected by backwater from temporary dam below.

Channel.—Probably permanent; bed of stream composed of gravel and stone.

Discharge measurements.—Made from the wagon bridge or by wading.

Diversions.—Several small ditches divert water for irrigation near the headwaters of the stream and five ditches take out within 6 or 8 miles above the station and carry water around it to irrigate several hundred acres of land; 2,000 or 3,000 acres of land are watered by natural flooding near Big Valley and Crane Lake, but much of the water is probably returned to the stream. The combined capacity of the five ditches above mentioned is about 30 second-feet. Measurements of the combined discharge showed 25 second-feet of water in June, 1910; 20 second-feet in April, 1911; 13 second-feet in July, 1911. Below the bridge the grade of the stream is very flat and water is diverted into the M. C. ditch by means of a temporary dam which is repaired at the beginning of each irrigation season.

Winter flow.—Discharge relation may be slightly affected by ice during periods of extreme cold weather and occasionally by backwater from ice jams. Control usually remains open.

Accuracy.—Determination of mean gage height is rendered rather difficult during the spring by diurnal fluctuations, which, however, are not so marked as on Twenty-mile and Honey creeks.

Cooperation.—Station maintained in cooperation with the Warner Lake Irrigation Co.

Discharge measurements of Deep Creek at Adel, Oreg., for 1909-10.

Upper gage.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1910.		<i>Feet.</i>	<i>Sec.-ft.</i>
May 12	R. B. Post.....	4.30	510	May 19	Stevens and Allen.....	3.85	206
Dec. 5	.....do.....	3.52	129	June 3	Warner Lake Irrigation Co.....	3.50	127
				June 14	.....do.....	3.10	59
1910.				July 8	.....do.....	2.81	11.3
Mar. 1	Warner Lake Irrigation Co.....	7.80	3,340	Sept. 29	Allen and Davenport..	2.87	14.9

Lower gage.

Date.	Time.	Hydrographer.	Gage height.	Dis-charge.	Date.	Time.	Hydrographer.	Gage height.	Dis-charge.
1910			<i>Feet.</i>	<i>Sec.-ft.</i>	1910			<i>Feet.</i>	<i>Sec.-ft.</i>
Mar. 1	8 a. m....	Warner Lake Irrigation Co.	3.45	1,630	Mar. 5	8 a. m....	Warner Lake Irrigation Co.	2.80	1,070
1	6.30 p.m....	.....do.....	6.50	3,340	7	.....do.....	.....do.....	1.70	667
3	5 p. m....	.....do.....	5.10	2,290	7	5 p. m....	.....do.....	2.00	836
4	8 a. m....	.....do.....	2.80	1,080	8	7.40 a. m....	.....do.....	1.60	676
4	5 p. m....	.....do.....	4.00	1,550	10	8 a. m....	.....do.....	.50	468

¹ Formerly called Warner Creek.

Daily gage height, in feet, of Deep Creek at Adel, Oreg., for 1909-10.

Upper gage.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1909.						1909.					
1.....		4.5	3.2	2.5	2.3	16.....	4.2	4.0	2.8	2.3	2.5
2.....		4.7	3.2	2.5	2.3	17.....	4.2	3.9	2.7	2.3	2.5
3.....		4.8	3.2	2.4	2.3	18.....	4.2	3.8	2.7	2.3	2.5
4.....		4.8	3.0	2.4	2.3	19.....	4.3	3.9	2.6	2.3	2.5
5.....		4.8	3.0	2.4	2.55	20.....	4.3	4.0	2.6	2.3	2.5
6.....		4.6	3.2	2.4	2.5	21.....	4.4	3.8	2.6	2.3	2.5
7.....		4.4	3.2	2.4	2.3	22.....	4.3	3.7	2.6	2.3	2.5
8.....		4.3	3.1	2.4	2.4	23.....	4.3	3.6	2.5	2.3	2.5
9.....		4.2	3.0	2.4	2.4	24.....	4.0	3.6	2.5	2.3	2.5
10.....		4.1	3.0	2.4	2.4	25.....	4.0	3.5	2.5	2.3	2.5
11.....	4.4	4.1	3.0	2.4	2.4	26.....	4.2	3.5	2.5	2.3	2.5
12.....	4.3	4.1	2.9	2.4	2.5	27.....	4.6	3.4	2.5	2.3	2.5
13.....	4.3	4.1	2.9	2.3	2.5	28.....	4.7	3.4	2.5	2.3	2.6
14.....	4.3	4.1	2.9	2.3	2.5	29.....	4.5	3.3	2.5	2.3	2.6
15.....	4.3	4.0	2.8	2.3	2.5	30.....	4.2	3.2	2.5	2.3	2.6
						31.....	4.3	.....	2.5	2.3	.....

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2.6	2.7	4.3	3.2	.....	6.8	4.4	4.4	3.5	2.85	2.7	2.8
2.....	2.6	3.0	3.5	3.6	.....	7.3	4.4	4.3	3.5	2.8	2.7	2.8
3.....	2.6	2.8	3.5	3.6	.....	5.65	4.1	4.3	3.5	2.8	2.7	2.8
4.....	2.6	2.7	3.5	3.9	.....	5.3	4.1	4.3	3.4	2.8	2.7	2.8
5.....	2.6	2.7	3.4	3.8	.....	5.4	4.1	4.2	3.35	2.8	2.7	2.8
6.....	2.6	2.8	3.4	3.6	.....	4.9	4.3	4.1	3.3	2.8	2.7	2.8
7.....	2.6	2.75	3.4	3.6	.....	4.9	4.4	4.0	3.3	2.8	2.7	2.8
8.....	2.5	2.7	3.5	3.4	3.1	4.7	4.5	4.0	3.3	2.8	2.7	2.8
9.....	2.5	2.8	3.8	3.3	3.1	4.6	4.5	4.0	3.2	2.8	2.7	2.8
10.....	2.5	2.7	3.6	3.2	3.1	4.5	4.5	4.2	3.1	2.8	2.7	2.8
11.....	2.5	2.7	3.5	3.2	3.0	4.5	4.5	4.2	3.1	2.8	2.7	2.8
12.....	2.5	2.6	3.5	3.2	3.0	4.7	4.5	4.1	3.1	2.8	2.7	2.8
13.....	2.5	2.5	3.7	3.3	3.0	4.8	4.5	4.1	3.1	2.8	2.8	2.8
14.....	2.5	2.5	3.4	3.3	3.0	4.9	4.4	4.1	3.1	2.8	2.8	2.8
15.....	2.5	2.5	3.3	3.3	3.0	4.9	4.4	4.0	3.1	2.7	2.8	2.8
16.....	2.5	2.7	3.3	3.3	3.0	5.0	4.4	4.0	3.1	2.7	2.8	2.9
17.....	2.5	2.8	3.3	3.2	3.0	5.0	4.5	3.9	3.1	2.7	2.8	2.9
18.....	2.5	2.7	3.2	3.2	2.9	5.1	4.5	3.9	3.1	2.7	2.7	2.9
19.....	2.5	2.9	3.2	3.2	2.9	5.0	4.5	3.8	3.1	2.7	2.7	2.9
20.....	2.55	4.8	3.2	3.1	2.9	5.0	4.7	3.8	3.05	2.7	2.75	2.9
21.....	2.55	6.3	3.2	3.1	2.9	5.0	4.55	3.8	3.0	2.9	2.75	2.9
22.....	2.55	5.6	3.3	3.5	2.9	5.0	4.5	3.8	3.0	2.9	2.75	2.9
23.....	2.5	6.4	3.3	8.8	3.0	4.9	4.5	3.7	3.0	2.8	2.75	2.9
24.....	2.5	6.2	3.3	.....	3.0	4.5	4.5	3.7	3.0	2.8	2.75	2.9
25.....	2.5	5.5	3.4	.....	3.2	4.5	4.55	3.7	3.0	2.7	2.75	2.9
26.....	2.5	4.6	3.4	.....	3.1	4.4	4.6	3.7	3.0	2.7	2.75	2.9
27.....	2.5	4.4	3.4	.....	3.1	4.4	4.55	3.7	3.0	2.7	2.75	2.9
28.....	2.5	4.2	3.4	.....	4.4	4.3	4.5	3.65	2.9	2.7	2.75	2.9
29.....	2.5	4.2	3.3	.....	.....	4.2	4.4	3.6	2.85	2.7	2.75	2.9
30.....	2.5	4.3	3.3	.....	.....	4.2	4.45	3.5	2.85	2.7	2.75	2.85
31.....	2.6	.....	3.2	.....	.....	4.2	.....	3.5	.....	2.7	2.75	.....

NOTE.—Ice probably existed Dec. 2 to 31, 1909.

Discharge relation probably affected by ice Jan. 2-9, 1910. Gage carried out by flood and ice jam Jan. 23 and replaced by observer Feb. 8. Creek somewhat obstructed by ice Feb. 8 to 14, after which obstruction not probable. Gage heights Feb. 28 to Mar. 2 are the mean of several readings a day. The highest stage reached was 9.0 feet at 6 p. m. Mar. 2. Subsequent readings were made about noon each day, when the creek was at about its lowest stage in the diurnal cycle, and are therefore not fairly representative of the daily mean.

Daily gage height, in feet, of Deep Creek at Adel, Oreg., for 1909-10—Continued.

Lower gage.

Day.	Feb.	Mar.	Apr.	Day.	Feb.	Mar.	Apr.	Day.	Feb.	Mar.	Apr.
1910.				1910.				1910.			
1.....		5.0	1.2	11.....		1.6	1.4	21.....		2.5	
2.....		5.2	1.2	12.....		1.7	1.4	22.....		1.9	
3.....		5.1	.8	13.....		1.7	1.4	23.....		1.7	
4.....		2.8	.9	14.....		1.9	1.3	24.....		1.6	
5.....		4.0	1.0	15.....		2.0	1.2	25.....		1.4	
6.....		2.4	1.0	16.....		1.8	1.1	26.....		1.3	
7.....		2.0	1.1	17.....		2.0	1.1	27.....		1.3	
8.....		2.2	1.4	18.....		2.2	1.3	28.....	1.1	1.2	
9.....		1.6	1.4	19.....		2.8	1.5	29.....		1.1	
10.....		.5	1.4	20.....		2.7	1.4	30.....		1.0	
								31.....		1.0	

NOTE.—Gage heights observed on bridge gage probably affected by backwater from the diversion dam below after about Apr. 1; time of observation not known, but it probably varied from day to day.

Daily discharge, in second-feet, of Deep Creek at Adel, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....									600	130	13	5
2.....									700	130	13	5
3.....									750	130	8	5
4.....									750	86	8	5
5.....									750	86	8	18
6.....									650	130	8	13
7.....									550	130	8	5
8.....									510	107	8	8
9.....									470	86	8	8
10.....									430	86	8	8
11.....								550	430	86	8	8
12.....								510	430	66	8	13
13.....								510	430	66	5	13
14.....								510	430	66	5	13
15.....								510	390	50	5	13
16.....								470	390	50	5	13
17.....								470	350	35	5	13
18.....								470	310	35	5	13
19.....								510	350	23	5	13
20.....								510	390	23	5	13
21.....								550	310	23	5	13
22.....								510	270	23	5	13
23.....								510	240	13	5	13
24.....								390	240	13	5	13
25.....								390	210	13	5	13
26.....								470	210	13	5	13
27.....								650	182	13	5	13
28.....								700	182	13	5	23
29.....								600	156	13	5	23
30.....								470	130	13	5	23
31.....								510		13	5	

Daily discharge, in second-feet, of Deep Creek at Adel, Oreg., for 1909-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	23	35	370	61	60	2,020	410	410	122	14	7	11
2.....	23	86	122	61	50	2,400	410	370	122	11	7	11
3.....	23	50	122	61	40	1,580	295	370	122	11	7	11
4.....	23	35	122	61	30	1,280	295	370	99	11	7	11
5.....	23	35	99	61	30	1,080	295	330	90	11	7	11
6.....	23	50	99	61	25	771	370	295	80	11	7	11
7.....	23	42	99	61	25	766	410	260	80	11	7	11
8.....	13	35	122	61	20	671	450	260	80	11	7	11
9.....	13	50	199	61	20	588	450	260	61	11	7	11
10.....	13	35	145	61	20	484	450	330	44	11	7	11
11.....	13	35	122	61	25	565	450	330	44	11	7	11
12.....	13	23	122	61	25	622	450	295	44	11	7	11
13.....	13	13	171	80	25	648	450	295	44	11	11	11
14.....	13	13	99	80	30	702	410	295	44	11	11	11
15.....	13	13	80	80	30	718	410	260	44	7	11	11
16.....	13	35	80	80	30	712	410	260	44	7	11	18
17.....	13	50	80	61	30	742	450	229	44	7	11	18
18.....	13	35	61	61	18	802	450	229	44	7	7	18
19.....	13	66	61	61	18	875	450	199	44	7	7	18
20.....	18	750	61	44	18	855	540	199	37	7	9	18
21.....	18	1,700	61	44	18	822	470	199	30	18	9	18
22.....	18	1,100	80	122	18	728	450	199	30	18	9	18
23.....	13	1,800	80	2,500	30	672	450	171	30	11	9	18
24.....	13	1,610	80	1,000	30	565	450	171	30	11	9	18
25.....	13	1,020	99	800	61	540	470	171	30	7	9	18
26.....	13	490	99	600	44	508	490	171	30	7	9	18
27.....	13	410	99	400	44	508	470	171	30	7	9	18
28.....	13	330	99	300	410	478	450	158	18	7	9	18
29.....	13	330	80	200	.....	448	410	145	14	7	9	18
30.....	13	370	80	100	.....	438	430	122	14	7	9	14
31.....	18	.....	61	80	.....	438	.....	122	.....	7	9	.....

NOTE.—Daily discharge, except as noted, based on readings of the upper gage as published. Discharge May 11 to Nov. 20, 1909, determined from a rating curve fairly well defined above 50 second-feet; curve is based on one measurement in May and the form of the curve for the period following, but it gives results consistent with the daily discharge for low water of 1910. Discharge from Nov. 21, 1909, to Sept 30, 1910, determined from a rating curve well defined between 10 and 1,500 second-feet.

Special methods used as follows: Jan. 2-9, discharge interpolated because of ice; Jan. 23, estimated, because of ice jam, at about one-half of open-channel discharge; Jan. 24 to Feb. 7 estimated, assuming that creek fell rather rapidly after the high water; Feb. 8-13, estimate reduced on account of ice; Mar. 1-10, discharge taken from a hydrograph drawn by plotting as coordinates with time the discharge corresponding to gage readings on the upper gage and the measurements made by engineers of the Warner Lake Irrigation Co.; probably represents the daily mean fairly well; Mar. 11-31, mean discharge determined from the two sets of gage readings on upper and bridge gage.

The maximum discharge recorded, 4,950 second-feet, at 6 p. m. Mar. 2, 1910.

Monthly discharge of Deep Creek near Adel, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accuracy.
	Maximum.	Minimum.	Mean.		
1909.					
May 11-31.....	700	390	513	21,400	B.
June.....	750	130	406	24,200	B.
July.....	130	13	56.9	3,500	B.
August.....	13	5	6.48	398	C.
September.....	23	5	12.2	726	C.
The period.....				50,200	
1909-10.					
October.....	23	13	15.9	978	B.
November.....	1,800	13	355	21,100	C.
December.....	370	61	108	6,640	C.
January.....	2,500	44	240	14,800	D.
February.....	410	18	43.7	2,430	C.
March.....	2,400	438	807	49,600	C.
April.....	540	295	428	25,560	B.
May.....	410	122	247	15,200	B.
June.....	122	14	53.0	3,150	B.
July.....	18	7	9.77	601	B.
August.....	11	7	8.42	518	B.
September.....	18	10	15.0	893	B.
The year.....	2,500	7	194	141,000	

HONEY CREEK NEAR PLUSH, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 20, T. 36 S., R. 24 E., half a mile above the mouth of the canyon, $1\frac{1}{2}$ miles northwest of Plush, and 1 mile above the wagon bridge near Plush; below all tributaries.

Records presented.—May 13, 1909, to September 30, 1910.

Drainage area.—About 185 square miles.

Gages.—The first gage was a vertical staff fastened to the wagon bridge, but as gage heights were affected by backwater from a temporary diversion dam below the station, a vertical staff in two sections was installed by the Warner Lake Irrigation Co., February 24, 1910, half a mile above the mouth of the canyon and 1 mile above the bridge.

Channel.—Bed composed of gravel; shifts slightly.

Discharge measurements.—At the original site made from the bridge; now made from cable near the gage or by wading.

Winter flow.—Considerably affected by ice.

Diversions.—Records at this point show the total run-off from the basin above the station except for a small amount of water diverted near the head of the stream and used to irrigate a few hundred acres.

Accuracy.—Records fairly reliable, although some inaccuracy is caused by diurnal fluctuations of the stream.

Cooperation.—Station maintained in cooperation with the Warner Lake Irrigation Co.

Discharge measurements of Honey Creek near Plush, Oreg., for 1909–10.

Date.	Time.	Hydrographer.	Gage height.	Dis-charge.	Date.	Time.	Hydrographer.	Gage height.	Dis-charge.
1909.			<i>Feet.</i>	<i>Sec.-ft.</i>	1910.			<i>Feet.</i>	<i>Sec.-ft.</i>
May 13	.....	R. B. Post.....	4.40	137	Mar. 5	6 p. m....	Warner Lake Irrigation Co.	2.40	243
Dec. 7 ^a	.....	.....do.....	4.00	23	8	3.20 p. m. ....	.....do.....	1.50	129
1910.					9	9.30 a. m. ....	.....do.....	1.50	116
Feb. 24	6 a. m....	Warner Lake Irrigation Co.	6.30	2,240	12	9.45 a. m. ....	.....do.....	1.60	128
25	10 a. m....	.....do.....	1.50	125	May 19	.....	Stevens and Allen.	+ .65	39
25	4 p. m....	.....do.....	2.00	204	June 11	.....	Warner Lake Irrigation Co.	-.10	13.0
26	11.40 a. m. ....	.....do.....	.70	64	July 18	.....	.....do.....	-.46	.94
26	3 p. m....	.....do.....	1.30	91	Oct. 1	.....	Allen and Davenport.	-.38	1.9
26	5 p. m....	.....do.....	1.40	104					
Mar. 2	1 p. m....	.....do.....	4.00	702					
2	5 p. m....	.....do.....	4.30	933					

^a Measured through 4 inches of ice.

Daily gage height, in feet, of Honey Creek at Plush, Oreg., for 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1909.						1909.					
1		5.35		3.6	2.9	16	4.5	4.3	3.6	3.2	2.8
2		5.55		3.5	2.8	17	4.35	4.35	3.6	3.2	2.8
3		5.5	3.65	3.5	2.8	18	4.6	4.4		3.2	2.8
4		5.35	3.65	3.4	2.8	19	5.15	5.3		3.2	2.8
5		5.2	3.65	3.35	2.8	20	5.15	5.2		3.2	2.8
6		5.2	3.6	3.2	2.8	21	5.2	4.85		3.2	2.8
7		4.95	3.6	3.2	2.8	22	5.35	4.35		3.2	2.8
8		4.8	3.55	3.2	2.8	23	5.15	4.0		3.2	2.8
9		4.75	3.65	3.2	2.8	24	5.2	4.15		3.2	2.8
10		4.6	3.6	3.2	2.8	25	4.95	4.25	3.6	3.2	2.8
11		4.35	3.6	3.2	2.8	26	5.2	3.7	3.6	3.2	3.25
12		4.4	3.6	3.2	2.8	27	6.05	3.05	3.6	3.2	3.0
13	4.4	4.3	3.6	3.2	2.8	28	5.9	3.7	3.55	3.2	2.95
14	4.5	4.4	3.6	3.2	2.8	29	5.5	3.7	3.5	3.1	2.9
15	4.5	4.35	3.6	3.2	2.8	30	5.1	3.7	3.5	3.05	2.85
						31	5.2		3.5	3.0	
Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	
1909-10.											
1	2.8	3.6	4.3			5.2	1.5	1.7	0.3	-0.4	
2	2.8	3.6	4.0			4.5	1.5	1.7	.25	-.4	
3	3.1	3.5	3.8			3.5	1.4	1.65	.25	-.4	
4	3.1	3.5	3.8			3.0	1.4	1.6	.25	-.4	
5	3.2	3.5	3.1			2.2	1.5	1.5	.2	-.3	
6	3.2	3.5	3.1			2.2	1.4	1.3	.2	-.3	
7	3.2	3.4	4.0			2.0	1.5	1.2	.2	-.35	
8	3.2	3.4	4.1			1.8	1.7	1.0	.2	-.4	
9	3.2	3.4	4.1			1.5	2.0	.8	.1	-.4	
10	3.2	3.3	4.5			1.5	2.2	1.4	0	-.45	
11	3.2	3.3	4.5			1.6	2.2	1.3	-.1	-.5	
12	3.2	3.3	4.5			1.6	2.0	1.2	-.2	-.4	
13	3.2	3.3	4.3			2.8	1.8	1.1	-.2	-.45	
14	3.2	3.3	4.3			1.8	1.8	1.1	-.1	-.4	
15	3.25	3.3	4.3			1.8	1.9	1.0	-.1	-.4	
16	3.3	3.3	4.3			2.0	2.0	.9	-.2	-.45	
17	3.3	3.4	4.0			2.0	1.9	.8	-.2		
18	3.3	3.4	3.1	4.3		2.1	1.8	.8	-.2		
19	3.3	3.5	3.1	4.4		2.2	1.8	.7	-.25		
20	3.35	4.2	3.9	4.5		2.6	1.8	.75	-.25		
21	3.4	4.9	3.9	4.5		2.1	1.8	.9	-.25		
22	3.4	4.8	3.9	8.15		1.9	1.7	.8	-.25		
23	3.4	6.1	3.9	8.6		1.8	1.7	.65	-.2		
24	3.5	6.35	3.9		3.6	1.7	1.8	.6	-.2		
25	3.5	5.5	3.9		2.6	1.6	1.8	.7	-.25		
26	3.6	5.2	3.9		1.4	1.4	1.8	.6	-.25		
27	3.6	4.1	3.9		1.6	1.3	1.9	.5	-.3		
28	3.6	4.7	3.9		3.9	1.2	1.9	.4	-.3		
29	3.5	4.5	3.9			.9	1.8	.3	-.3		
30	3.5	4.3	3.9			1.1	1.8	.3	-.3		
31	3.6		5.2			1.3		.3			

NOTE.—Stream frozen over Dec. 7, 1909. Ice conditions probably existed throughout the month. All gage heights for 1909 refer to gage at bridge. Bridge gage read Jan. 1 to Apr. 16, 1910, gage in poor condition and flow affected by ice part of the time; gage height, can not be used except for period Jan. 18 to 23.

Gage at the mouth of the canyon read from Feb. 24. Gage heights Feb. 24 to Mar. 5 taken from a hydrograph plotted from both the direct readings on the upper gage and the readings on the lower gage reduced to corresponding heights on the upper by means of a curve of relation. Gage heights beginning Mar. 6 represent one reading daily; no observations July 17 to Sept. 30. Gage heights for portions of November and December somewhat questionable. Probably no ice at the upper gage during the period of records.

Daily discharge, in second-feet, of Honey Creek near Plush, Oreg., for 1910.

Day.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.
1	20		1,540	120	150	20	2
2	20		1,060	120	150	18	2
3	20		600	108	142	18	2
4	20		470	108	134	18	2
5	20		234	120	120	16	3
6	20		238	108	97	16	3
7	20		200	120	86	16	2.5
8	20		166	150	66	16	2
9	20		120	200	50	12	2
10	20		120	238	108	9	1.5
11	30		134	238	97	7	1
12	30		134	200	86	5	2
13	30		372	166	76	5	1.5
14	30		166	166	76	7	2
15	30		166	183	66	7	2
16	30		200	200	58	5	1.5
17	30		200	183	50	5	1.5
18	30		218	166	50	5	1.5
19	30		238	166	43	4	1.5
20	50		322	166	46	4	1.5
21	100		218	166	58	4	1.5
22	1,000		183	150	50	4	1.5
23	1,200		166	150	40	5	1.5
24	800	1,030	150	166	36	5	1.5
25	500	407	134	166	43	4	1.5
26	300	120	108	166	36	4	1.5
27	200	150	97	183	30	3	1.5
28	100	884	86	183	25	3	1.5
29	50		58	166	20	3	1.5
30	50		76	166	20	3	1.5
31	50		97		20		1.5

NOTE.—Daily discharge Feb. 24 to July 31 determined from a fairly well-defined discharge rating curve. Daily discharge Feb. 24 to Mar. 5—a period of great diurnal fluctuation—determined by applying the rating table to gage heights taken at 3-hour intervals from a hydrograph and using the mean of the 8 determinations of discharge as the discharge for the day. This method gives results considerably larger than those obtained by applying the rating table to the mean of the gage heights.

Daily discharge for high-water period in January determined by assuming a discharge of 30 second-feet for the gage reading of Jan. 19 on the lower gage, and extending a curve through this point parallel to the curve derived from the relation of the gages in February and March; values Jan. 22 and 23 reduced arbitrarily for assumed effect of ice jam; discharge was further assumed to have fallen rather rapidly.

Mean discharge for Feb. 1-23 estimated at 30 second-feet.

Daily discharge July 17 to Sept. 30 estimated at 1.5 second-feet.

Monthly discharge of Honey Creek near Plush, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu-racy.
	Maximum.	Minimum.	Mean.		
1910.					
January	1,200	20	157	9,650	D.
February	1,030	30	117	6,500	C.
March	1,540	58	267	16,400	C.
April	238	108	163	9,700	C.
May	150	20	68.7	4,220	B.
June	20	3	8.4	500	B.
July	3	1.5	1.8	111	B.
August			a 1.5	92	D.
September			a 1.5	89	D.
The period				47,300	

a Estimated.

MISCELLANEOUS STATIONS IN WARNER VALLEY.

A number of gaging stations were established by the Warner Lake Irrigation Co. in June, 1910, on Deep and Honey Creeks and their tributaries and records obtained for about six weeks. The records of the measurements and gage heights have been furnished by the company, but discharges have been computed by the United States Geological Survey.

Miscellaneous discharge measurements in Warner Lake drainage basin in 1910.

[By Warner Lake Irrigation Co.]

Date.	Stream.	Tributary to—	Locality.	Gage height.	Dis-charge.
				<i>Feet.</i>	<i>Sec.-ft.</i>
June 14	Deep Creek....	Crump Lake..	At Big Valley, NE. $\frac{1}{4}$ sec. 4, T. 40 S., R. 22 E..	1.43	52.3
July 7	do.....	do.....	do.....	.93	16.6
June 16	Camas Creek..	Deep Creek..	Above Mud Creek, Sec. 6, T. 39 S., R. 22 E..	.96	2.5
26	do.....	do.....	do.....	.91	1.4
17	Mud Creek....	Camas Creek..	Sec. 32, T. 38 S., R. 22 E..	1.09	10.0
July 8	do.....	do.....	do.....	.88	5.9
June 15	Blue Creek....	do.....	do.....	.44	2.7
15	Drake Creek..	Deep Creek..	Sec. 9, T. 29 S., R. 23 E..	1.13	10.0
24	do.....	do.....	do.....	1.12	8.8
20	Honey Creek..	Hart Lake....	Above Snyder Creek, sec. 13, T. 36 S., R. 22 E.	.58	3.2

Daily gage height, in feet, and discharge, in second-feet, of streams in Warner Valley, Oreg., for 1910.

Day.	Deep Creek at Big Valley.				Camas Creek above Mud Creek.				Mud Creek near mouth.			
	June.		July.		June.		July.		June.		July.	
	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
1.....			1.04	22			0.88	1.0			0.94	6.9
2.....			1.02	21			.87	.8			.92	6.6
3.....			1.00	20			.87	.8			.91	6.4
4.....			.98	19			.86	.7			.90	6.2
5.....			.96	18			.86	.7			.89	6.1
6.....			.95	18			.85	.6			.88	5.9
7.....			.93	17			.85	.6			.88	5.9
8.....			.91	16			.85	.6			.87	5.8
9.....			.90	16			.85	.6			.87	5.8
10.....			.90	16			.85	.6			.87	5.8
11.....			.89	16			.85	.6			.87	5.8
12.....			.89	16			.85	.6			.87	5.8
13.....			.88	15			.85	.6			.86	5.6
14.....			.87	15			.85	.6			.86	5.6
15.....	1.43	53	.87	15	1.00	3.6	.85	.6	1.10	10.2	.86	5.6
16.....	1.40	50	.86	14	.96	2.6	.85	.6	1.10	10.2	.86	5.6
17.....	1.38	48	.85	14	.96	2.6	.85	.6	1.09	10.0	.85	5.5
18.....	1.35	45	.84	14	.95	2.4	.84	.5	1.09	10.0	.85	5.5
19.....	1.30	40	.83	13	.94	2.2	.84	.5	1.08	9.8	.85	5.5
20.....	1.28	38	.82	13	.93	1.9	.84	.5	1.08	9.8	.85	5.5
21.....	1.26	37	.80	12	.93	1.9			1.07	9.5		
22.....	1.22	34	.79	12	.92	1.7			1.06	9.3		
23.....	1.20	32	.78	11	.92	1.7			1.06	9.3		
24.....	1.19	31	.78	11	.91	1.4			1.05	9.1		
25.....	1.17	30			.91	1.4			1.04	8.9		
26.....	1.15	29			.90	1.2			1.02	8.4		
27.....	1.12	27			.90	1.2			1.00	8.0		
28.....	1.10	26			.89	1.1			.99	7.8		
29.....	1.08	25			.89	1.1			.97	7.5		
30.....	1.06	24			.89	1.1			.95	7.1		
Mean.....		35.5		14.8		1.82		0.64		9.06		5.87
Run-off in acre-feet.....		1,130		705		57.6		25.4		287		233

Daily gage height, in feet, and discharge, in second-feet, of streams in Warner Valley, Oreg., for 1910—Continued.

Day.	Blue Creek near mouth.				Drake Creek near mouth.				Honey Creek above Snyder Creek.			
	June.		July.		June.		July.		June.		July.	
	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
1.....			0.41				1.11	8			0.64	4.7
2.....			.41				1.11	8			.64	4.7
3.....			.40				1.11	8			.63	4.5
4.....			.40				1.10	7			.63	4.5
5.....			.40				1.10	7			.62	4.2
6.....			.40				1.10	7			.61	4.0
7.....			.40				1.10	7			.60	3.8
8.....			.41				1.10	7			.59	3.6
9.....			.41				1.10	7			.58	3.4
10.....			.41				1.10	7			.58	3.4
11.....			.42				1.10	7			.57	3.2
12.....			.42				1.10	7			.56	3.0
13.....			.42				1.10	7			.55	2.8
14.....			.43				1.10	7			.54	2.6
15.....	0.44		.43		1.13	10	1.10	7	0.60	3.8	.53	2.4
16.....	.44		.43		1.13	10	1.10	7	.60	3.8	.52	2.2
17.....	.44		.44		1.13	10	1.10	7	.60	3.8	.50	1.8
18.....	.44		.45		1.13	10	1.10	7	.60	3.8	.50	1.8
19.....	.44		.45		1.13	10	1.10	7	.60	3.8	.49	1.6
20.....	.43		.45		1.13	10	1.10	7	.58	3.4	.48	1.4
21.....	.43		.45		1.13	10	1.10	7	.60	3.8	.48	1.4
22.....	.43		.45		1.13	10	1.10	7	.61	4.0	.48	1.4
23.....	.43				1.12	9	1.10	7	.62	4.2	.47	1.3
24.....	.42				1.12	9			.63	4.5		
25.....	.42				1.12	9			.64	4.7		
26.....	.42				1.12	9			.65	4.9		
27.....	.42				1.12	9			.65	4.9		
28.....	.42				1.12	9			.65	4.9		
29.....	.42				1.11	8			.65	4.9		
30.....	.42				1.11	8			.65	4.9		
Mean.....						9.5		7.1		4.26		2.94
Run-off in acre-feet.....						301		330		135		134

ALBERT LAKE DRAINAGE BASIN.

GENERAL FEATURES.

Abert Lake is a strongly alkaline body of water lying near the central part of Lake County. It has a surface area of 60 square miles at an elevation of about 4,240 feet. The waters are largely supplied from Chewaucan River and Crooked Creek.

Chewaucan River rises on the high divide in the southern part of Lake County and flows northward into Chewaucan marsh, through which it meanders in a southeasterly direction and flows into Abert Lake at its southern extremity.

The principal agricultural development in the basin consists of the hay lands in the Chewaucan marsh and the area of irrigated lands bordering the marsh on the south and along Chewaucan River in the vicinity of Paisley.

CHEWAUCAN RIVER AT PAISLEY, OREG.

Location.—In the SE. $\frac{1}{4}$ sec. 23, T. 33 S., R. 18 E., half a mile above the town of Paisley.

Records presented.—January 4, 1905, to December 13, 1907; January 17, 1909, to September 30, 1910.

Drainage area.—272 square miles.

Gage.—Vertical staff.

Channel.—Probably permanent; bed composed of clean gravel; banks subject to overflow at stages above gage height 8 feet.

Discharge measurements.—Made from cable-60 feet below gage or by wading.

Winter flow.—Affected by ice.

Diversions.—The station is above all diversions except George Conn's irrigation ditch, which heads about 2 $\frac{1}{2}$ miles above the gage on the left bank and diverts water around the station. Conn's mill ditch diverts water from the left bank about 250 feet below the gage, where a low timber dam has been constructed. The current is fairly swift between the gage and the dam and practically no back-water was noticeable prior to 1910. During 1910 there was probably a little back-water. The Brattain ditch diverts water about 300 feet below the gage on the right bank; it follows the foothills for many miles down the river and supplies water for use in irrigating land immediately around Paisley and large areas of hay land in Chewaucan Marsh.

Storage.—It has been proposed to store the water of Chewaucan River at a point 20 miles upstream from Paisley to provide for the reclamation of a tract of 12,000 acres northeast of Paisley under the terms of the Carey Act. The development of this project, however, has been hindered by water-right claims of the owners of hay lands in Chewaucan Marsh. These lands have been flooded during the spring and winter to a depth of several feet and, as all the water is claimed for this flooding, development work can not proceed until water rights have been adjudicated.

Accuracy.—Estimates good.

Discharge measurements of Chewaucan River at Paisley, Oreg., in 1905-6, 1909-10.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 5 ^a	Ivan Landes.....	4.15	51	May 6	Ivan Landes.....	6.60	799
Feb. 26	do.....	4.20	102	25	do.....	5.72	462
Mar. 22	do.....	4.45	135	26	do.....	5.98	547
Apr. 5	do.....	4.65	183	27	do.....	5.80	480
May 11	do.....	4.72	213	June 25	do.....	5.08	293
June 4	do.....	5.12	308	1909.			
July 4	do.....	3.80	42	Jan. 15	R. B. Post.....	6.56	841
26	do.....	3.57	23	May 3	do.....	6.55	856
Sept. 28	do.....	3.67	41	16	do.....	6.05	571
Nov. 3	do.....	3.57	29	Dec. 10	do.....	5.06	212
22	do.....	3.72	42	1910.			
Dec. 17 ^b	do.....	3.90	40	May 3	L. R. Allen.....	5.59	423
1906.				16	do.....	5.06	260
Apr. 6	Ivan Landes.....	6.17	567	Sept. 26	Allen and Davenport..	3.74	38.4
7	do.....	5.90	465	26	do.....	3.74	38.3
25	do.....	5.98	505				

^a Slush ice running in river.

^b Measured through ice 0.3 foot thick.

Daily gage height, in feet, of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.					4.3	4.2	4.4	5.0	4.8	4.0	3.5	3.4
2.					4.1	4.3	4.5	4.95	4.75	3.9	3.5	3.4
3.					4.0	4.25	4.5	4.85	4.8	3.82	3.4	3.4
4.				4.0	4.0	4.25	4.5	4.8	5.15	3.75	3.4	3.4
5.				4.15	4.0	4.3	4.65	4.85	5.0	3.7	3.4	3.5
6.				4.2	3.85	4.3	4.8	4.8	4.8	3.7	3.4	3.5
7.				4.2	3.6	4.35	4.9	4.8	4.7	3.7	3.4	3.5
8.				4.1	3.8	4.3	4.9	4.9	4.8	3.7	3.4	3.5
9.				4.1	3.6	4.3	4.9	4.85	4.8	3.6	3.4	3.5
10.				5.0	3.6	4.35	4.8	4.7	4.7	3.6	3.4	3.5
11.				5.15	3.5	4.4	4.75	4.7	4.6	3.6	3.4	3.5
12.				5.2	4.1	4.5	4.8	4.8	4.7	3.6	3.4	3.5
13.				4.9	4.2	4.65	4.9	4.75	4.6	3.6	3.4	3.5
14.				5.2	4.0	4.6	4.7	4.75	4.6	3.6	3.4	3.5
15.				4.5	4.05	4.5	4.8	4.85	4.5	3.6	3.4	3.5
16.				4.4	3.9	4.6	4.8	4.95	4.5	3.6	3.4	3.5
17.				4.3	3.9	4.65	4.7	5.05	4.4	3.6	3.4	3.5
18.				4.1	3.9	4.6	4.75	5.0	4.3	3.6	3.4	3.5
19.				4.05	4.05	4.6	4.7	5.0	4.3	3.6	3.4	3.5
20.				4.0	4.25	4.5	4.7	4.95	4.3	3.7	3.4	3.5
21.				3.95	4.1	4.55	4.75	4.85	4.2	3.7	3.4	3.5
22.				3.9	3.95	4.45	4.8	4.85	4.2	3.7	3.4	3.5
23.				4.5	4.0	4.45	4.9	4.85	4.6	3.6	3.4	3.5
24.				4.4	4.1	4.4	5.0	4.8	4.2	3.6	3.4	3.5
25.				4.2	4.1	4.35	5.05	4.7	4.2	3.6	3.4	3.5
26.				4.0	4.1	4.8	5.15	4.9	4.2	3.7	3.4	3.5
27.				4.2	4.1	4.45	5.1	5.0	4.1	3.6	3.4	3.6
28.				3.9	4.15	4.4	5.1	4.9	4.0	3.6	3.5	3.7
29.				4.0		4.3	5.1	4.8	4.0	3.6	3.5	3.6
30.				4.1		4.0	5.15	4.8	3.9	3.5	3.4	3.6
31.				4.5			4.15	4.8		3.5	3.4	
1905-6.												
1.	3.6	3.5	3.6	4.3	3.9	4.1	5.3	6.4	5.5	4.9	3.7	3.6
2.	3.6	3.5	3.7	4.0	3.9	4.0	5.0	6.5	5.5	4.8	3.7	3.6
3.	3.6	3.6	3.7	3.9	3.9	4.0	4.8	6.7	5.6	4.7	3.7	3.6
4.	3.6	3.5	3.7	3.9	4.3	4.1	5.0	6.8	6.0	4.7	3.7	3.6
5.	3.6	3.5	3.5	3.9	3.9	4.0	5.2	6.9	6.0	4.8	3.6	3.7
6.	3.6	3.6	3.6	3.9	4.0	4.1	5.94	6.9	6.3	4.7	3.6	3.7
7.	3.7	3.6	3.8	3.9	3.9	4.1	6.0	6.8	6.0	4.7	3.6	3.7
8.	3.7	3.6	3.8	3.9	3.9	4.2	6.4	6.8	5.8	4.5	3.6	3.7
9.	3.6	3.6	4.0	3.9	3.9	4.3	6.5	6.9	6.0	4.5	3.6	3.7
10.	3.6	3.6	4.2	3.9	3.8	4.4	6.2	7.0	5.9	4.4	3.6	3.7
11.	3.6	3.5	4.1	4.0	3.8	4.4	5.8	7.0	5.8	4.3	3.7	
12.	3.6	3.5	4.1	4.0	3.8	4.0	5.7	6.9	6.0	4.3	3.7	3.8
13.	3.6	3.6	4.0	4.0	3.8	4.0	5.9	6.6	5.8	4.3	3.6	4.0
14.	3.6	3.7	4.0	4.0	3.8	4.1	6.1	6.6	5.7	4.3	3.6	3.9
15.	3.6	3.6	4.0	3.9	3.8	4.1	6.1	6.6	5.7	4.2	3.6	3.8
16.	3.6	3.7	3.9	4.0	3.8	4.0	6.4	6.3	5.7	4.2	3.6	3.7
17.	3.6	3.7	3.8	4.1	3.8	4.0	6.5	6.1	5.6	4.3	3.6	3.7
18.	3.6	3.7	3.8	4.0	4.0	4.1	6.3	6.0	5.5	4.2	3.6	3.7
19.	3.5	3.7	3.7	4.1	4.1	4.1	6.5	5.9	5.5	4.1	3.6	3.7
20.	3.5	3.6	3.8	4.2	4.0	4.0	6.7	5.9	5.4	4.1	3.6	3.7
21.	3.5	3.6	4.2	4.3	4.1	4.2	6.7	5.9	5.3	4.0	3.6	3.7
22.	3.5	3.6	4.5	4.1	4.0	4.8	6.7	5.6	5.3	4.0	3.6	3.7
23.	3.5	3.7	4.6	4.1	4.0	5.0	5.4	5.6	5.2	4.0	3.6	3.7
24.	3.6	3.6	4.8	3.9	4.0	4.9	6.2	5.5	5.1	4.0	3.6	3.7
25.	3.6	3.6	4.6	3.9	3.9	5.3	6.1	5.5	5.1	3.9	3.6	3.7
26.	3.6	3.7	4.0	3.8	3.9	5.3	5.8	6.1	5.4	3.8	3.6	3.7
27.	3.6	3.6	4.0	3.8	4.3	5.1	5.9	5.8	5.4	3.8	3.6	3.7
28.	3.6	3.7	4.0	3.9	4.1	5.0	5.9	5.9	5.3	3.8	3.6	3.7
29.	3.6	3.6	4.0	3.8		5.2	6.0	5.7	5.1	3.7	3.6	3.6
30.	3.6	3.6	4.0	3.8		5.3	6.3	5.6	5.0	3.7	3.6	3.6
31.	3.6		4.1	3.9		6.5		5.7		3.7	3.6	

Daily gage height, in feet, of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	3.6	3.8	3.8	3.8	5.0	4.9	-----	6.5	6.9	5.2	3.9	3.7
2.....	3.6	3.8	3.8	4.0	7.25	4.6	-----	6.4	6.8	5.0	3.9	3.8
3.....	3.6	3.8	3.7	3.8	6.9	4.5	-----	6.4	6.6	5.0	3.9	3.6
4.....	3.7	3.8	3.7	3.7	7.65	4.6	-----	6.4	6.7	5.0	3.9	3.7
5.....	3.7	3.8	-----	3.9	7.0	4.6	-----	6.3	6.6	5.0	3.9	3.8
6.....	3.7	3.8	4.0	3.8	6.4	4.6	-----	6.4	6.8	5.0	3.8	3.7
7.....	3.7	3.9	3.9	3.6	6.0	4.6	-----	6.3	6.9	4.9	3.7	3.6
8.....	3.7	3.9	3.9	4.9	5.5	4.6	-----	6.3	6.7	4.7	-----	3.5
9.....	3.7	3.8	3.9	5.0	5.4	4.6	-----	6.6	6.6	4.6	3.6	3.5
10.....	3.7	-----	3.9	5.1	5.2	4.6	7.0	6.8	6.0	4.5	3.6	3.5
11.....	3.7	3.8	4.0	5.0	5.0	4.5	7.0	6.8	6.9	4.5	3.6	3.5
12.....	-----	3.8	3.9	4.1	5.0	4.3	7.0	6.5	6.9	4.5	3.6	3.5
13.....	3.7	3.8	3.9	4.3	4.9	4.3	7.0	6.5	-----	4.4	3.5	3.5
14.....	3.7	3.8	3.9	4.4	4.9	4.2	7.0	6.4	6.3	-----	3.5	3.5
15.....	3.7	4.0	3.9	4.6	4.9	4.3	6.9	6.3	5.9	4.3	3.5	3.5
16.....	3.7	-----	3.9	4.4	4.9	4.4	6.8	6.8	5.8	4.2	3.5	3.5
17.....	3.7	3.8	3.9	4.3	4.9	5.0	6.6	6.8	5.7	-----	3.4	3.5
18.....	3.7	3.8	3.9	4.2	4.9	6.8	6.5	7.0	5.6	4.1	3.4	3.5
19.....	3.7	3.8	3.9	4.3	4.9	6.7	6.5	7.5	5.5	4.1	3.4	3.6
20.....	3.7	3.8	3.9	4.4	4.9	5.7	6.4	7.0	6.0	4.0	3.4	3.6
21.....	-----	3.9	3.8	4.3	4.9	5.5	6.4	6.8	5.9	4.0	3.4	3.6
22.....	3.8	3.8	3.8	4.2	5.0	5.3	6.5	6.5	5.8	4.1	3.4	3.6
23.....	3.8	3.7	3.8	4.1	5.1	5.3	6.6	6.5	5.6	4.2	3.4	3.6
24.....	3.7	-----	4.0	4.2	5.2	5.3	6.7	6.5	5.4	4.1	3.4	3.5
25.....	3.7	3.8	4.7	4.3	5.2	5.3	6.6	6.4	5.4	4.0	3.5	3.5
26.....	3.7	3.8	-----	4.4	5.3	5.2	6.7	6.5	5.3	4.0	3.5	3.5
27.....	3.7	3.8	4.5	4.5	4.7	5.0	6.6	6.6	5.3	4.0	3.5	3.5
28.....	3.7	3.8	4.3	-----	4.9	5.3	6.5	6.7	5.3	4.0	3.5	-----
29.....	3.7	3.8	4.1	4.3	-----	5.3	6.6	6.9	5.2	4.0	3.5	3.9
30.....	3.7	3.8	4.0	4.4	-----	5.4	6.4	6.9	5.0	3.9	3.5	3.8
31.....	3.8	-----	3.5	4.6	-----	5.3	-----	6.6	-----	3.9	3.6	-----

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1907.											
1.....	3.8	3.8	3.5	11.....	3.6	3.6	3.7	21.....	3.6	3.6	-----
2.....	3.7	3.7	-----	12.....	3.8	3.6	3.8	22.....	3.6	3.7	-----
3.....	3.6	3.7	-----	13.....	3.7	3.6	3.8	23.....	3.6	3.7	-----
4.....	3.6	3.6	-----	14.....	3.6	3.6	-----	24.....	3.6	3.7	-----
5.....	3.6	3.6	-----	15.....	3.6	3.6	-----	25.....	3.8	3.7	-----
6.....	3.6	3.6	-----	16.....	3.6	3.6	-----	26.....	3.8	3.7	-----
7.....	3.6	3.6	-----	17.....	3.6	3.5	-----	27.....	3.8	3.7	-----
8.....	3.5	3.6	3.6	18.....	3.6	3.6	-----	28.....	3.9	3.7	-----
9.....	3.5	3.6	3.6	19.....	3.5	3.6	-----	29.....	3.9	3.7	-----
10.....	3.5	3.6	3.6	20.....	3.6	3.6	-----	30.....	3.8	3.6	-----
								31.....	3.8	-----	-----

Daily gage height, in feet, of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.					4.3	4.4	5.1		6.5	4.6	3.6	
2.					4.3	4.6	5.3	6.6	6.7	4.5	3.6	4.1
3.					4.3	4.8	5.2	6.8	6.8	4.5	3.7	3.8
4.					4.2	5.0	5.1	7.0	7.0	4.4	3.6	3.8
5.					4.0	4.4	4.9	7.1	7.0	4.4	3.6	3.7
6.					4.1	4.5	4.9	6.8	6.7	4.7	3.6	3.7
7.					4.2	4.4	5.0	6.9	6.5	4.4	3.6	3.7
8.					3.9	4.4		6.9	6.5	4.3	3.6	3.7
9.					4.0	4.3	5.2	6.8	6.3	4.3		3.7
10.					4.0	4.2	5.4	6.7	6.1	4.3	3.6	3.7
11.					3.9	4.1	5.5	6.3	6.0	4.2	3.6	3.7
12.					4.2	4.1	5.6	6.2	5.9	4.2	3.6	3.7
13.					4.3	4.2	5.7	6.0	6.0	4.2	3.6	3.7
14.					4.1	4.4	6.0	6.3	5.9	4.1	3.6	3.7
15.					4.2	4.6	6.0	6.2	5.8	4.1	3.6	3.6
16.					6.2	4.8	6.2	6.2	5.8	4.1	3.6	3.6
17.				6.2	5.3	4.6	6.4	6.0	5.7	4.1	3.6	3.6
18.				6.8	4.9	4.5	6.5	6.0	5.7	4.0	3.5	3.6
19.				6.0	4.5	4.6	6.2	6.0	6.0	4.0	3.5	3.6
20.				6.2		4.6	6.0		5.6	3.9	3.5	3.6
21.				6.2	4.3	4.6	6.0	6.0	5.4	3.9	3.5	3.6
22.				5.2	4.1	4.6	5.8	5.8	5.3	3.9	3.5	3.6
23.				4.8	4.2	4.5	6.0	6.0	5.2	3.9	3.5	3.6
24.				4.7	4.3	4.5	6.0	6.0	5.1	3.9	3.5	3.6
25.				4.6	4.3	4.6	6.1	6.1	5.1	3.8	3.5	3.7
26.				4.4	4.1	4.5	6.5	6.5	5.0	3.7	3.5	4.0
27.				4.4	4.3	4.7	6.6	6.6	4.9	3.7	3.5	4.1
28.				4.1	4.3	4.8	6.6	6.6		3.7		4.1
29.				4.3		4.8	6.3	6.3	4.8	3.7	3.6	4.1
30.				4.2		4.8	6.2	6.2	4.7	3.6	3.6	4.1
31.				4.3		4.9				3.6	3.6	
1909-10.												
1.	4.1	5.1	5.8		4.9	7.6	5.5	6.1	4.4			
2.	4.3	5.1	5.9		4.6	6.2	5.4	5.8	4.3			
3.	4.8	5.1	5.6		4.4	6.9	5.2	5.6	4.3			
4.	4.7	5.1	5.3		4.4	6.8	5.3	5.5	4.3			
5.	4.7	5.1	5.2		4.5	6.2	5.5	5.5	4.3			
6.	4.7	5.1	4.8		4.5	6.0	5.6	5.4	4.2			
7.	4.7	4.3	5.0		4.4	5.5	5.7	5.4	4.2			
8.	4.7	4.3	5.2		4.4	5.4	5.9	5.3	4.1			
9.	4.7	4.3	5.4		4.5	5.4	6.1	5.3	4.1			
10.	4.7	4.3	5.3		4.4	5.5	6.0	5.4	4.0			
11.	4.7	4.3	5.2	6.4	4.4	5.5	6.0	5.3	4.0			
12.	4.7	4.3	5.1	6.4	4.5	5.4	6.1		4.0			
13.	4.7	4.3	5.1	6.5	4.5	5.4	6.0	5.3	4.0			
14.	4.7	4.3	5.1	6.4	4.6	5.4	5.3	5.2	4.0			
15.	4.7	4.4	4.5	6.4	4.6	5.5	5.2	5.1	4.0			
16.	4.7	4.6	4.5	6.5	4.3	5.4	6.0	5.0	4.0			
17.	4.7	4.6	4.5	6.4	4.4	5.7	6.0	5.0	4.0			
18.	4.8	5.0	4.5	6.4	4.5	5.8	6.0	5.0	4.0			
19.	5.0	4.8	4.5	6.5	4.4	5.9	6.3	5.0	3.9			
20.	5.1	7.0	4.4	6.7	4.4	6.0	6.3	5.0	3.9			
21.	5.1	6.9	4.3	7.9	4.4	6.0	6.3	4.9	3.9			
22.	5.0	7.4	4.3	9.1	4.5	5.2	6.4	4.8	3.9			
23.	5.0	9.2	4.5	7.8	4.4	6.1	6.3	4.8	3.9			
24.	5.0	8.0	4.5	6.6	4.5	6.1	6.3	4.8	3.9			
25.	5.0	7.4	4.5	6.6	4.7	5.2	6.4	4.8	3.9			
26.	5.0	6.6	4.5	6.6	4.6	5.9	6.3		3.9			3.7
27.	5.0	6.1	4.5	6.4	4.6	5.7	6.4	4.6	3.9			
28.	5.1	5.8	4.3	6.1	4.6	5.6	6.5	4.6	3.9			
29.	5.0	5.7	4.3	5.2		5.4	6.5	4.5				
30.	5.0	5.7	4.3	4.8		5.5	6.6	4.4				
31.	5.0			5.0		5.5		4.4				

NOTE.—Ice present Jan. 10-13, 1905; Jan. 1 to Feb. 12, 1906; Dec. 15, 1906, to Feb. 1, 1907; during later part of January, 1909, and Dec. 15, 1909, to Feb. 16, 1910. Discharge relation during 1910 may have been affected by the raising of a dam which diverts water into a mill canal about 250 feet below gage.

Daily discharge, in second-feet, of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.....				64	111	93	131	276	223	64	23	19
2.....				64	77	111	152	262	210	53	23	19
3.....				64	64	102	152	236	223	45	19	19
4.....				64	64	102	152	223	318	40	19	19
5.....				85	64	111	186	236	276	36	19	23
6.....				93	48	111	223	223	223	36	19	23
7.....				93	29	121	249	223	198	36	19	23
8.....				77	43	111	249	249	223	36	19	23
9.....				77	29	111	249	236	223	29	19	23
10.....				77	29	121	223	198	198	29	19	23
11.....				77	23	131	210	198	174	29	19	23
12.....				77	77	152	223	223	198	29	19	23
13.....				77	93	186	249	210	174	29	19	23
14.....				332	64	174	198	210	174	29	19	23
15.....				152	71	152	223	236	152	29	19	23
16.....				131	53	174	223	262	152	29	19	23
17.....				111	53	186	198	290	131	29	19	23
18.....				77	53	174	210	276	111	29	19	23
19.....				70	71	174	198	276	111	29	19	23
20.....				64	102	152	198	262	111	36	19	23
21.....				58	77	168	210	236	93	36	19	23
22.....				53	58	142	223	236	93	36	19	23
23.....				152	64	142	249	236	93	29	19	23
24.....				131	77	131	276	223	93	29	19	23
25.....				93	77	121	290	198	93	29	19	23
26.....				64	77	223	318	249	93	36	19	23
27.....				93	77	141	304	276	77	29	19	29
28.....				53	85	131	304	249	64	29	23	36
29.....				64	.....	111	304	223	64	29	23	29
30.....				77	.....	64	318	223	53	23	19	29
31.....				152	.....	85	.....	223	.....	23	19	.....
1906.												
1.....	29	23	29	112	56	81	335	692	387	235	36	29
2.....	29	23	36	68	56	68	259	739	387	211	36	29
3.....	29	29	36	56	56	68	211	838	414	189	36	29
4.....	29	23	36	56	112	81	259	890	535	189	36	29
5.....	29	23	23	56	56	68	309	945	535	211	29	36
6.....	29	29	29	56	68	81	516	945	647	189	29	36
7.....	36	29	29	56	56	81	535	890	535	189	29	36
8.....	36	29	43	56	56	96	692	890	472	148	29	36
9.....	29	29	64	56	56	112	739	945	535	148	29	36
10.....	29	29	93	56	45	129	606	1,000	503	129	29	36
11.....	29	23	77	68	45	129	472	1,000	472	112	36	40
12.....	29	23	77	68	45	68	442	945	535	112	36	45
13.....	29	29	64	68	45	68	503	788	472	112	29	68
14.....	29	36	64	68	45	81	569	788	442	112	29	56
15.....	29	29	64	56	45	81	569	788	442	96	29	45
16.....	29	36	53	68	45	68	692	647	442	96	29	36
17.....	29	36	43	81	45	68	739	569	414	112	29	36
18.....	29	36	43	68	68	81	647	535	387	96	29	36
19.....	23	36	36	81	81	81	739	503	387	81	29	36
20.....	23	29	43	96	68	68	838	503	361	81	29	36
21.....	23	29	93	112	81	96	838	503	335	68	29	36
22.....	23	29	152	81	68	211	838	414	335	68	29	36
23.....	23	36	174	81	68	259	361	414	309	68	29	36
24.....	29	29	223	56	68	235	606	387	284	68	29	36
25.....	29	29	174	56	56	335	569	387	284	56	29	36
26.....	29	36	64	45	56	335	472	569	361	45	29	36
27.....	29	29	64	45	112	284	503	472	361	45	29	36
28.....	29	36	64	56	81	259	503	503	335	45	29	36
29.....	29	29	64	45	.....	309	535	442	284	36	29	29
30.....	29	29	64	45	.....	647	647	414	259	36	29	29
31.....	29	.....	77	56	.....	739	.....	442	.....	36	29	.....

Daily discharge, in second-feet, of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1907.												
1.....	29	45	45	.....	254	232	.....	820	1,060	301	56	36
2.....	29	45	45	.....	1,280	168	.....	765	994	254	56	45
3.....	29	45	36	.....	1,060	148	.....	765	876	254	56	29
4.....	36	45	36	.....	1,560	168	.....	765	934	254	56	36
5.....	36	45	50	.....	1,120	168	.....	713	876	254	56	45
6.....	36	45	68	.....	765	168	.....	765	994	254	45	36
7.....	36	56	56	.....	570	168	.....	713	1,060	232	36	29
8.....	36	56	56	.....	385	168	.....	713	934	189	32	23
9.....	36	45	56	.....	355	168	.....	876	876	168	29	23
10.....	36	45	56	.....	301	168	1,120	994	570	148	29	23
11.....	36	45	68	.....	254	148	1,120	994	1,060	148	29	23
12.....	36	45	56	.....	254	112	1,120	820	1,060	148	29	23
13.....	36	45	56	.....	232	112	1,120	820	886	129	23	23
14.....	36	45	56	.....	232	96	1,120	765	713	120	23	23
15.....	36	68	56	.....	232	112	1,060	713	528	112	23	23
16.....	36	56	56	.....	232	129	994	994	489	96	23	23
17.....	36	45	56	.....	232	254	876	994	452	88	19	23
18.....	36	45	56	.....	232	994	820	1,120	417	81	19	23
19.....	36	45	56	.....	232	934	820	1,450	385	81	19	29
20.....	36	45	56	.....	232	452	765	1,120	570	68	19	29
21.....	40	56	45	.....	232	335	765	994	528	68	19	29
22.....	45	45	45	.....	254	327	820	820	489	81	19	29
23.....	45	36	45	.....	277	327	876	820	417	96	19	29
24.....	36	40	68	.....	301	327	934	820	355	81	19	23
25.....	36	45	189	.....	301	327	876	765	355	68	23	23
26.....	36	45	168	129	327	301	934	820	327	68	23	23
27.....	36	45	148	148	189	254	876	876	327	68	23	23
28.....	36	45	112	130	232	327	820	934	327	68	23	40
29.....	36	45	81	112	.....	327	876	1,060	301	68	23	56
30.....	36	45	68	129	.....	355	765	1,060	254	56	23	45
31.....	45	.....	23	168	.....	327	.....	876	.....	56	29	.....

Day.	May.	June.	July.	Day.	May.	June.	July.	Day.	May.	June.	July.
1907.				1907.				1907.			
1.....	45	45	23	11.....	29	29	36	21.....	29	29	.....
2.....	36	36	23	12.....	45	29	45	22.....	29	36	.....
3.....	29	36	23	13.....	36	29	45	23.....	29	36	.....
4.....	29	29	26	14.....	29	29	.....	24.....	29	36	.....
5.....	29	29	26	15.....	29	29	.....	25.....	45	36	.....
6.....	29	29	29	16.....	29	29	.....	26.....	45	36	.....
7.....	29	29	29	17.....	29	23	.....	27.....	45	36	.....
8.....	23	29	29	18.....	29	29	.....	28.....	56	36	.....
9.....	23	29	29	19.....	23	29	.....	29.....	56	36	.....
10.....	23	29	29	20.....	29	29	.....	30.....	45	29	.....
								31.....	45	.....	.....

Daily discharge, in second-feet, of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1					112	129	277	770	820	168	29	55
2					112	168	327	876	934	148	29	81
3					112	210	301	994	994	148	36	45
4					96	254	277	1,120	1,120	129	29	45
5					68	129	232	1,180	1,120	129	29	36
6					81	148	232	994	934	189	29	36
7					96	129	254	1,060	820	129	29	36
8					56	129	278	1,060	820	112	29	36
9					68	112	301	994	713	112	29	36
10					68	96	355	934	615	112	29	36
11					56	81	385	713	570	96	29	36
12					96	81	417	663	528	96	29	36
13					112	96	452	570	570	96	29	36
14					81	129	570	713	528	81	29	36
15					96	168	570	663	489	81	29	29
16						663	210	663	663	489	81	29
17				663	327	168	765	570	452	81	29	29
18				994	232	148	820	570	452	68	23	29
19				570	148	168	663	570	570	68	23	29
20				663	130	168	570	570	417	56	23	29
21				663	112	168	570	570	355	56	23	29
22				301	81	168	489	489	327	56	23	29
23				210	96	148	570	570	301	56	23	29
24				189	112	148	570	570	277	56	23	29
25				168	112	168	615	615	277	45	23	36
26				129	81	148	820	820	254	36	23	68
27				129	112	189	876	876	232	36	23	81
28				81	112	210	876	876	221	36	26	81
29				112	210	713	713	210	36	29	81	81
30				96	210	663	663	189	29	29	81	81
31				112	232	742	742	29	29	29	29	29
1909-10.												
1	81	277	489		154	1,530	387	616	120			
2	112	277	528		125	662	355	495	104			
3	210	277	417		96	1,050	295	421	104			
4	189	277	327		102	992	325	387	104			
5	189	277	301		116	662	387	387	104			
6	189	277	210		116	573	421	355	90			
7	189	112	254		102	387	457	355	90			
8	189	112	301		108	355	533	325	77			
9	189	112	355		123	355	616	325	77			
10	189	112	327		108	387	573	355	65			
11	189	112	301		120	387	573	325	65			
12	189	112	277		137	355	616	325	65			
13	189	112	277		137	355	573	325	65			
14	189	112	277		156	355	325	295	65			
15	189	129	277		156	387	295	268	65			
16	189	168			104	355	573	243	65			
17	189	168			120	457	573	243	65			
18	210	254			137	495	573	243	65			
19	254	210			120	533	712	243	54			
20	277	1,120		104	120	573	712	243	54			
21	277	1,060		457	120	573	712	220	54			
22	254	1,380		1,180	137	295	764	197	54			
23	254	3,500		495	120	616	712	197	54			
24	254	1,820		156	137	616	712	197	54			
25	254	1,380		156	176	295	764	197	54			
26	254	876		156	156	533	712	176	54			35
27	254	615		220	156	457	764	156	54			
28	277	489		220	156	421	818	156	54			
29	254	452		90		355	818	137	50			
30	254	452		77		387	874	120	50			
31	254			137		387		120				

NOTE.—Daily discharge determined as follows:
 1905 and 1906. From two well defined rating curves; open-channel rating curves applied throughout both years; values for winter months subject to some error on account of ice.
 1907 and 1909. From curves well defined below 1,000 second-feet. Mean discharge estimated as follows: Apr. 1-9, 1907, 700 second-feet; Dec. 2-7, 1907, 26 second-feet; Jan. 1-25, 1909, 60 second-feet; Dec. 15-31, 1909, 90 second-feet.
 1910. From curve well defined between 35 and 1,000 second-feet. Mean discharge Jan. 1-19, estimated at 70 second-feet. Effect of ice obstruction Jan. 20 to Feb. 10, estimated from observer's notes; daily discharge for this period only approximate. Discharges interpolated for days on which gage was not read.

Monthly discharge of Chewaucan River at Paisley, Oreg., for 1905-1907, 1909-10.

[Drainage area, 272 square miles.]

Month.	Discharge in second-feet.				Run-off.		Accuracy.
	Maximum.	Minimum.	Mean.	Per square mile.	Depth in inches on drainage area.	Total in acre-feet.	
1905.							
January.....	332	53	94.1	0.346	0.40	5,790	B.
February.....	111	23	64.6	.237	.25	3,590	B.
March.....	223	64	136	.500	.58	8,360	A.
April.....	318	131	230	.846	.94	13,700	A.
May.....	290	198	238	.875	1.01	14,600	A.
June.....	318	53	154	.566	.63	9,160	A.
July.....	64	23	33.2	.122	.14	2,040	A.
August.....	23	19	19.5	.072	.08	1,200	A.
September.....	36	19	23.5	.086	.10	1,400	A.
The period.....						59,800	
1905-6.							
October.....	36	23	28.5	.105	.12	1,750	A.
November.....	36	23	29.7	.109	.12	1,770	A.
December.....	223	23	70.8	.369	.43	4,350	B.
January.....	112	45	65.4	.341	.28	4,020	C.
February.....	112	45	62.1	.228	.24	3,450	B.
March.....	739	68	173	.636	.73	10,600	A.
April.....	838	211	551	2.03	2.26	32,800	A.
May.....	1,000	387	671	2.47	2.85	41,300	A.
June.....	647	259	415	1.53	1.71	24,700	A.
July.....	235	36	110	.405	.47	6,760	B.
August.....	36	29	30.4	.112	.13	1,870	B.
September.....	68	29	37.1	.136	.15	2,210	B.
The year.....	1,000	23	187	.691	9.49	136,000	
1906-7.							
October.....	45	29	35.2	.129	.15	2,160	B.
November.....	68	36	46.8	.172	.19	2,780	B.
December.....	189	23	66.7	.245	.28	4,100	B.
January.....	168		^a 74.7	.275	.32	4,590	C.
February.....	1,560	189	433	1.59	1.66	24,000	B.
March.....	994	96	279	1.03	1.19	17,200	A.
April.....			^a 859	3.16	3.53	51,100	C.
May.....	1,450	713	888	3.26	3.76	54,600	A.
June.....	1,060	254	647	2.38	2.66	38,500	A.
July.....	301	56	134	.493	.57	8,240	A.
August.....	56	19	29.7	.109	.13	1,830	A.
September.....	56	23	29.6	.109	.12	1,760	A.
The year.....		19	294	1.09	14.56	211,000	
1907.							
October.....	56	23	34.0	.125	.14	2,090	A.
November.....	45	23	31.7	.117	.13	1,890	A.
December 1-13.....	45	23	30.2	.111	.05	779	C.
1909.							
January 17-31.....	994	81	339	1.25	.70	10,100	C.
February.....	663	56	130	.478	.50	7,220	A.
March.....	254	81	159	.585	.67	9,780	A.
April.....	876	232	516 ^b	1.90	2.12	30,700	A.
May.....	1,180	489	766	2.82	3.25	47,100	B.
June.....	1,120	189	553	2.03	2.26	32,900	B.
July.....	189	29	85.5	.314	.36	5,260	A.
August.....	36	23	27.2	.100	.12	1,670	A.
September.....	81	29	43.5	.160	.18	2,590	A.
The period.....						147,000	
1909-10.							
October.....	277	81	214	.787	.91	13,200	A.
November.....	^b 3,500	112	554	2.04	2.28	33,000	B.
December.....	528		^b 199	.735	.85	12,200	C.
January.....	1,180		^b 154	.566	.65	9,470	D.
February.....	156	96	129	.474	.49	7,160	C.
March.....	1,530	355	521	1.92	2.21	32,000	A.
April.....	874	295	584	2.15	2.40	34,800	A.
May.....	616	120	279	1.03	1.19	17,200	A.
June.....	120	50	69.8	.257	.29	4,150	A.
July.....			^a 35.0	.129	.15	2,150	C.
August.....			^a 23.0	.085	.10	1,410	D.
September.....			^a 35.0	.129	.14	2,080	C.
The year.....	^b 3,500		233	.857	11.66	169,000	

^a Estimated.

^b Approximate.

SUMMER LAKE DRAINAGE BASIN.

GENERAL FEATURES.

Summer Lake is a strongly alkaline body of water with a surface area of about 70 square miles, at an elevation of about 4,140 feet. The water is supplied largely from Ana River, a stream 7 miles long, which heads in five large springs on the northern border of the valley. These springs supply a continuous flow of about 145 second-feet. The water has a nearly constant temperature of 65°.

The agricultural development in this basin is limited to a narrow strip lying at the foot of a high escarpment along the western shore of Summer Lake. This narrow strip is the most favored section in central Oregon and in it intensive agriculture has been practiced since 1848. The escarpment is effective protection against the cold winds from the west and north, which in passing over make an eddy drawing the warm air of the lake over the lands and serving to equalize the temperature. The region has long been famous for its fruit. Apples, pears, peaches, cherries, and berries of all kinds are grown in abundance and crop failures are practically unknown.

Along the eastern shore of the lake and extending eastward into the wide valley adjoining Chewaucan marsh is a large area of agricultural land, a portion of which could undoubtedly be watered from Ana River and another portion from Chewaucan River. Projects looking to the irrigation of these lands have been under consideration.

ANA RIVER NEAR SUMMER LAKE, OREG.

Location.—In the NW. $\frac{1}{4}$ SE. $\frac{1}{4}$ sec. 6, T. 30 S., R. 17 E., about 6 miles northwest of the town of Summer Lake.

Records presented.—Occasional measurements July 17, 1904, to September 25, 1910.

Drainage area.—Undetermined.

Gage.—Vertical staff.

Channel.—Clay; practically permanent.

Discharge measurements.—Made from foot log near the gage or from county bridge.

Accuracy.—Discharge relation badly affected by backwater from the lake and temporary irrigation dams and gage heights are therefore not published.

This stream is almost entirely fed by springs and its flow is practically constant.

Discharge measurements of Ana River near Summer Lake, Oreg., in 1904-1910.

Date.	Hydrographer.	Point of measurement.	Gage height.	Discharge.
1904.			<i>Feet.</i>	<i>Sec.-ft.</i>
July 17		Foot log		165
18		County bridge.....		179
18		Foot log.....		155
Nov. 22		do.....		171
1905.				
Jan. 8		County bridge.....		150
Mar. 28	Ivan Landes.....	Foot log.....	3.50	148
Apr. 6	do.....	do.....	3.50	149
June 8	do.....	do.....	3.68	148
1906.				
Apr. 8	Ivan Landes	do.....	3.46	141
1909.				
Jan. 14	R. B. Post.....	do.....	3.95	^a 134
May 2	do.....	do.....	3.85	150
1910.				
Sept. 25	Allen and Davenport.....	do.....	3.95	141

^a Discharge doubtful.

SILVER LAKE DRAINAGE BASIN.

GENERAL FEATURES.

Silver Lake is a body of fresh water approximately 15 square miles in area, at an elevation of about 4,340 feet. The western, southern, and eastern borders of the lake consist of high escarpments; to the northwest is Paulina marsh.

Silver Creek, Bridge Creek, and Bear Creek flow from Yamsay and Hagar mountains northward into Paulina marsh and thence south-eastward into Silver Lake.

The water surface of the lake fluctuates considerably. During a succession of high-water years the water rises sufficiently to overflow into Thorn Lake and cover a small portion of the desert to the east. This fact perhaps accounts for the freshness of the lake. After a succession of dry years the lake surface diminishes and the waters become more and more alkaline until freshened again by another overflow.

The lake dried up entirely in 1889 during an extremely dry time.

The principal agricultural development at the present consists of hay lands in Paulina marsh and small irrigated tracts bordering the streams. During recent years all land suitable for agriculture has been taken as homesteads, and dry farming has been practiced with more or less success.

To the northeast and practically connected with Summer Lake drainage basin is Christmas Lake Valley, a flat alluvial area comprising 300,000 acres. This valley has no surface streams, but contains two or three small lakes. Alkali Flat, near the northeastern

part of the valley, is an intermittent lake; south of it Christmas Lake is a perennial body of water, at an elevation of 4,296 feet. North of Christmas Lake is Fossil Lake, and in the extreme southwestern portion and practically connected with Silver Lake basin is Thorn Lake. Nearly all the lands of Christmas Lake Valley have been taken as homesteads. Dry farming is practiced extensively and good crops of grain and potatoes and other crops have been raised. Water for domestic purposes is found in comparatively shallow wells. Near the eastern border of the valley, however, wells 40 feet deep have encountered salt water.

SILVER CREEK NEAR SILVER LAKE, OREG.

Location.—In sec. 28, T. 28 S., R. 14 E., $1\frac{1}{2}$ miles southwest of Silver Lake post office.

Records presented.—November 24, 1904, to March 31, 1907; January 11, 1909, to September 30, 1910.

Drainage area.—221 square miles.

Gage.—Inclined staff on the right bank. In April, 1910, the gage was found to have been raised from the true position and some of the gage readings for 1909 are therefore subject to error.

Channel.—Fairly permanent; bed composed of rocks and gravel.

Discharge measurements.—Made from a cable near the gage or by wading.

Storage.—As the normal summer flow of nearly all the streams in this region is appropriated for present irrigation requirements, any additional development will require storage. Several fairly good sites are available on Silver Creek above areas of agricultural land that could easily be irrigated from stored waters.

Accuracy.—Conditions favorable for good results. Records probably reliable.

Discharge measurements of Silver Creek near Silver Lake, Oreg., in 1904-1906, 1909-10.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1904.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Nov. 24	Ivan Landes.....	1.10	28.4	Apr. 9	Ivan Landes.....	5.52	664
28	do.....	1.15	30.2	9	do.....	4.48	412
				28	do.....	3.23	219
1905.				30	do.....	3.48	258
Jan. 21	Ivan Landes.....	1.00	25	May 5	do.....	3.65	288
Feb. 23	do.....	1.35	51	11	do.....	2.45	147
Mar. 17	do.....	1.70	74	23	do.....	1.45	53
Apr. 8	do.....	1.90	100				
May 7	do.....	1.30	48	1909.			
31	do.....	1.10	34	Apr. 28	R. B. Post.....	3.48	292
June 14	do.....	.99	24	Dec. 12	do.....	1.29	42
Aug. 7	do.....	.79	20				
Oct. 4	do.....	.74	14.8	1910.			
24	do.....	.74	21	Apr. 29	L. R. Allen.....	1.64	78
Nov. 10	do.....	.93	22	Sept. 24	Allen and Davenport..	.70	14.9
24	do.....	.73	14.8	Nov. 22	R. W. Davenport.....	.81	21.4
Dec. 21 ^a	do.....	.60	7.9				

^a Ice present.

Daily gage height, in feet, of Silver Creek near Silver Lake, Oreg., for 1905-1907, 1909-10.

Day.	Cet.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1				1.0	1.0	1.5	1.5	1.8	1.05	0.9	0.8	0.8
2				1.0	1.0	1.7	2.45	1.65	1.0	.85	.85	.75
3				1.05	1.0	1.7	2.4	1.4	1.1	.85	.8	.75
4				1.0	.95	1.6	2.4	1.3	1.2	.85	.8	.75
5				.95	.95	1.5	2.8	1.4	1.15	.8	.8	.75
6				.95	.95	1.85	2.5	1.3	1.1	.75	.8	.75
7				1.0	.9	1.8	2.0	1.3	1.15	.7	.8	.75
8				1.0	1.3	1.6	1.95	1.35	1.2	.7	.8	.75
9				1.0	1.2	1.4	1.7	1.65	1.1	.7	.8	.75
10				.95	1.1	1.45	1.75	1.35	1.05	.75	.8	.75
11				.95	1.0	1.6	1.6	1.4	1.05	.75	.75	.75
12				1.25	1.05	1.55	1.5	1.7	1.0	.8	.8	.75
13				1.25	1.05	1.55	1.75	1.55	1.0	.8	.8	.75
14				1.5	1.0	1.5	1.5	1.4	1.0	.8	.8	.75
15				1.6	1.0	1.4	1.4	1.3	1.0	.8	.8	.75
16				1.5	1.0	1.55	1.4	1.25	1.0	.8	.8	.75
17				1.25	1.1	1.7	1.3	1.25	1.0	.8	.8	.75
18				1.2	1.3	1.5	1.55	1.25	1.0	.8	.8	.75
19				1.1	1.05	1.5	1.5	1.2	.95	.8	.8	.75
20				1.0	2.0	1.65	1.4	1.15	.95	.8	.85	.75
21				1.0	2.25	1.55	1.4	1.2	.95	.8	.85	.75
22				1.0	1.4	1.6	1.5	1.15	.95	.8	.8	.8
23				1.05	1.8	1.6	2.0	1.1	.95	.8	.8	.75
24				1.45	1.4	1.75	1.9	1.05	1.0	.8	.8	.75
25				1.6	1.2	1.9	1.85	1.0	.95	.8	.8	.75
26				1.35	1.4	2.4	2.1	1.1	.95	.8	.8	.75
27				1.2	1.5	2.2	1.85	1.2	.9	.8	.8	.85
28				1.2	1.55	1.7	1.4	1.2	.9	.8	.8	.8
29				1.1		1.5	1.65	1.2	.9	.8	.8	.8
30				1.05		1.4	1.5	1.15	.9	.8	.8	.75
31				1.05		1.4		1.1		.8	.8	
1905-6.												
1	0.75	0.8	0.8	0.85	0.95	1.0	2.2	3.4	2.15	0.9	0.7	0.7
2	.75	.75	.7	.9	.9	.95	1.5	3.1	1.5	.85	.65	.7
3	.75	.75	.7	1.2	.5	.95	2.0		1.5	.85	.65	.7
4	.75	.75	.7	.9	.95	.6	1.8	3.25	1.3	.8	.65	.7
5	.75	.75	.7	.85	.85	.6	2.6	3.25	1.55	.8	.65	.7
6	.8	.85	.75	.85	1.1	.7	3.5	3.0	2.0	.8	.65	.7
7	.9	.95	.7	.8	.8	.9	4.3	3.0	1.8	.8	.65	.7
8	.85	1.2	.75	.8	.95	.9	4.0	2.8	2.0	.8	.65	.7
9	.85	1.2	.75	.9	.95	1.05	4.95	2.8	2.0	.75	.65	.7
10	.8	1.25	.9	.9	1.0	1.0	4.8	2.6	1.8	.75	.65	.75
11	.75	1.2	1.0	.9	1.0	1.2	4.0	2.6	1.6	.75	.65	.75
12	.75	1.2	1.0	.95	1.15	1.6	4.2	2.3	1.4	.75	.75	.7
13	.75	1.15	1.05	.9	1.15	1.6	4.8	2.0	1.4	.75	.75	.7
14	.75	.95	1.0	.95	1.0	1.4	4.6	2.1	1.4	.75	.7	.7
15	.75	1.05	1.0	.8	1.2	1.1	3.9	2.1	1.2	.8	.65	.7
16	.75	.85	1.0	1.4	1.0	1.0	4.9	1.8	1.2	.8	.65	.7
17	.8	.85	1.0	1.4	.8	.85	4.6	1.6	1.01	.75	.65	.7
18	.8	.8	1.0	.85	1.8	.95	4.2	1.4	.9	.75	.65	.7
19	.75	.8	.85	.95	1.6	.8	4.2	1.4	.9	.75	.7	.7
20	.75	.85	.85	.85	1.3	.95	4.0	1.4	.9	.75	.7	.7
21	.75	.75	.8	.95	1.3	.85	4.9	1.35	.9	.75	.7	.7
22	.75	.75	.8	1.2	.95	.9	4.9	1.4	.9	.75	.7	.7
23	.75	.75	.7	.9	.8	.9	4.0	1.45	.9	.75	.75	.7
24	.75	.75	.95	1.0	.8	1.2	3.5	1.3	.9	.75	.7	.7
25	.75	.75	1.1	1.0	.65	1.2	3.0	1.3	.9	.75	.7	.7
26	.75	.7	1.15	.95	.8	1.55	2.6	2.0	1.0	.7	.65	.65
27	.75	.7	1.0	.95	1.0	1.6	4.0	1.8	1.1	.65	.7	.65
28	.75	.7	.9	.95	.85	1.5	3.4	2.0	1.0	.65	.7	.65
29	.75	.75	.9	.9		1.6	2.9	2.5	.95	.65	.7	.65
30	.75	.75	.9	.9		2.1	3.5	2.0	.9	.65	.75	.65
31	.75		1.15	.9		3.15		1.85		.65	.7	

Daily gage height, in feet, of Silver Creek near Silver Lake, Oreg., for 1905-1907, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1906-7.												
1.....	0.65	0.65	0.4	0.7	1.5	2.4						
2.....	.65	.7	.4	.75	1.55	2.2						
3.....	.65	.65	.4	.8	2.8	2.0						
4.....	.65	.65	.4	.9	3.1	1.1						
5.....	.65	.75	.7	.85	5.0	1.1						
6.....	.65	.7	.7	.85	5.7	1.1						
7.....	.65	.7	.7	.85	4.1	1.5						
8.....	.65	.7	.7	.85	3.0	1.8						
9.....	.65	.75	.7	.9	2.6	1.6						
10.....	.65	.75	.75	1.0	3.0	1.2						
11.....	.7	.65	.7	1.1	2.8	1.2						
12.....	.7	.65	.7	1.1	2.7	1.0						
13.....	.65	.65	.7	1.1	2.4	1.1						
14.....	.65	.65	.75	1.0	2.2	1.1						
15.....	.65	.65	.75	1.0	2.2	1.6						
16.....	.65	.65	.6	1.1	2.2	1.3						
17.....	.65	.65	.6	1.1	2.2	2.2						
18.....	.65	.65	.6	1.1	2.1	3.4						
19.....	.65	.65	.6	1.1	2.2	5.1						
20.....	.65	.7	.6	1.2	2.4	9.08						
21.....	.65	.7	.6	1.2	2.5	5.0						
22.....	.65	.7	.65	1.3	2.95	4.2						
23.....	.65	.65	.7	1.3	2.9	2.2						
24.....	.65	.65	1.0	1.3	2.9	2.2						
25.....	.65	.7	2.1	1.3	3.0	2.3						
26.....	.65	1.0	2.1	1.4	3.0	2.2						
27.....	.65	.8	2.1	1.4	2.9	2.1						
28.....	.65	.65	.7	1.45	2.2	2.2						
29.....	.65	.6	.65	1.45	.....	2.2						
30.....	.65	.4	.7	1.45	.....	2.2						
31.....	.65	.....	.7	1.5	.....	2.8						
1909.												
1.....					0.9	1.0	2.9	2.7	1.3	0.8	0.7	0.7
2.....					.85	.9	3.0	3.0	1.2	.8	.65	.65
3.....					1.4	1.15	3.3	3.4	1.2	.8	.6	.65
4.....					1.4	1.5	2.4	4.1	1.3	.85	.6	.65
5.....					1.55	1.35	2.1	4.2	1.2	.9	.6	.65
6.....					1.5	1.35	2.0	3.5	1.1	.95	.65	.7
7.....					1.35	1.2	2.1	3.1	1.1	.8	.6	.65
8.....					1.2	1.0	2.4	2.8	1.0	.85	.6	.6
9.....					1.2	.95	2.7	2.8	1.2	.8	.6	.6
10.....					1.0	1.0	2.9	2.6	1.0	.9	.6	.65
11.....				1.35	.7	.9	2.5	2.4	.95	.85	.6	.6
12.....				1.2	.9	.85	3.85	2.0	.95	.8	.65	.6
13.....				1.0	.95	.9	3.3	2.0	.9	.8	.65	.6
14.....				.95	.95	1.2	3.5	2.0	1.0	.8	.6	.6
15.....				1.4	.9	1.9	3.7	1.9	.95	.7	.6	.6
16.....				2.1	1.68	2.4	3.8	2.0	1.0	.65	.6	.65
17.....				1.75	2.0	2.6	4.0	1.8	1.0	.7	.65	.6
18.....				2.1	1.95	1.9	3.8	1.5	1.0	.65	.6	.6
19.....				2.0	1.3	1.4	3.4	2.2	1.15	.65	.6	.6
20.....				2.5	1.25	1.45	3.4	1.8	1.1	.7	.6	.65
21.....				3.0	1.1	1.2	2.7	1.8	1.0	.65	.65	.65
22.....				2.4	.95	1.35	2.5	1.6	.9	.7	.65	.65
23.....				1.8	.95	1.2	2.6	1.5	.9	.75	.6	.65
24.....				1.6	.95	1.2	3.4	1.5	.85	.7	.6	.65
25.....				1.25	.8	2.0	3.1	1.3	.8	.7	.65	.65
26.....				1.0	.95	2.1	3.8	1.4	.85	.65	.7	.7
27.....				1.5	.9	2.6	3.7	1.4	.8	.65	.7	.65
28.....				1.15	1.1	2.9	3.4	1.5	.8	.65	.65	.65
29.....				.8	.....	2.9	3.0	1.3	.8	.7	.6	.65
30.....				.95	.....	2.0	2.75	1.8	.8	.7	.6	.65
31.....				.95	.....	2.85	.....	1.3	.....	.7	.6	.....

Daily gage height, in feet, of Silver Creek near Silver Lake, Oreg., for 1905-1907, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	0.65	0.7	1.7	1.05	1.45	3.15	2.6	1.75	1.0	0.9	0.75	0.7
2.....	.65	.65	1.55	.9	2.4	3.9	2.1	1.7	.95	.9	.75	.7
3.....	.7	.65	1.55	1.9	2.75	4.75	2.1	1.7	.95	.9	.75	.7
4.....	.65	.65	1.25	2.3	2.8	4.35	2.05	1.7	.9	.85	.75	.7
5.....	.7	.65	1.25	2.1	2.95	3.9	2.5	1.6	.9	.85	.75	.7
6.....	.7	.6	1.3	1.5	2.75	4.25	2.6	1.5	.9	.8	.75	.7
7.....	.7	.6	1.25	1.0	2.6	4.7	2.6	1.5	.9	.8	.75	.7
8.....	.65	.6	1.8	.9	2.1	4.65	3.4	1.5	.9	.8	.7	.7
9.....	.65	.65	1.25	.9	1.45	2.95	4.0	1.45	.9	.8	.7	.7
10.....	.65	.65	1.2	.9	1.25	4.65	4.05	1.4	.9	.8	.7	.7
11.....	.65	.65	1.2	.9	1.35	5.05	3.15	1.3	.9	.8	.7	.7
12.....	.7	.6	1.2	.9	1.6	3.8	2.6	1.25	.9	.8	.7	.7
13.....	.7	.65	1.15	.95	1.65	3.85	2.6	1.2	.9	.8	.7	.7
14.....	.7	.85	1.1	.9	1.65	3.95	2.4	1.15	.9	.75	.7	.7
15.....	.65	1.0	1.2	.9	1.15	3.9	2.3	1.15	.9	.75	.7	.7
16.....	.7	1.05	1.5	.9	1.35	4.0	2.3	1.15	.9	.75	.7	.75
17.....	.7	.95	1.5	.9	1.35	3.95	2.3	1.15	.9	.75	.7	.75
18.....	.6	1.0	1.5	.95	1.55	4.0	2.4	1.1	.9	.75	.7	.95
19.....	.6	1.05	1.15	.9	1.7	4.35	2.3	1.1	.9	.75	.7	1.0
20.....	.6	1.2	1.15	.95	1.65	4.15	2.2	1.1	.85	.75	.7	1.2
21.....	.6	1.6	1.2	1.0	1.6	4.1	2.2	1.1	.85	.75	.7	1.05
22.....	.6	2.2	1.4	3.05	1.45	3.8	2.2	1.1	.85	.75	.7	1.0
23.....	.6	6.25	1.55	2.5	1.25	3.4	2.0	1.1	.85	.75	.7	.9
24.....	.6	5.5	1.45	2.3	3.6	3.15	2.0	1.05	.85	.75	.7	.8
25.....	.6	5.05	1.55	2.2	1.25	2.65	1.9	1.05	.85	.75	.7	.7
26.....	.6	4.75	1.25	2.05	1.35	3.15	1.9	1.0	.85	.75	.7	.7
27.....	.6	4.2	1.2	1.6	1.15	2.75	1.95	1.0	.85	.75	.7	.7
28.....	.65	1.9	.9	1.6	1.55	2.5	1.9	1.0	.85	.75	.7	.7
29.....	.6	2.0	1.0	1.45	.....	2.5	1.65	1.0	.85	.75	.7	.7
30.....	.6	2.05	1.2	1.6	.....	2.65	1.65	1.0	.85	.75	.7	.7
31.....	.65	.....	1.15	1.55	.....	2.5	.....	1.0	.....	.75	.7	.....

NOTE.—Discharge relation affected by ice during winter months. Gage heights somewhat uncertain November, 1909, to Apr. 29, 1910.

Daily discharge, in second-feet, of Silver Creek near Silver Lake, Oreg., for 1905-1907, 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.....	27	27	62	62	87	30	21	17	17
2.....	27	27	78	161	74	27	19	19	15
3.....	30	27	78	155	54	33	19	17	15
4.....	27	24	70	155	46	39	19	17	15
5.....	24	24	62	203	54	36	17	17	15
6.....	24	24	92	167	46	33	15	17	15
7.....	27	21	87	107	46	36	14	17	15
8.....	27	46	70	102	50	39	14	17	15
9.....	27	39	54	78	74	33	14	17	15
10.....	24	33	58	82	50	30	15	17	15
11.....	24	27	70	70	54	30	15	15	15
12.....	42	30	66	62	78	27	17	17	15
13.....	42	30	66	82	66	27	17	17	15
14.....	62	27	62	62	54	27	17	17	15
15.....	70	27	54	54	46	27	17	17	15
16.....	62	27	66	54	42	27	17	17	15
17.....	42	33	78	46	42	27	17	17	15
18.....	30	46	62	66	42	27	17	17	15
19.....	33	30	62	62	39	24	17	17	15
20.....	27	107	74	54	36	24	17	19	15
21.....	27	137	66	54	39	24	17	19	15
22.....	27	54	70	62	36	24	17	17	17
23.....	30	87	70	107	33	24	17	17	15
24.....	58	54	82	97	30	27	17	17	15
25.....	70	39	97	92	27	24	17	17	15
26.....	50	54	155	119	33	24	17	17	15
27.....	39	62	131	92	39	21	17	17	19
28.....	39	66	78	54	39	21	17	17	17
29.....	33	.....	62	74	39	21	17	17	17
30.....	30	.....	54	62	36	21	17	17	15
31.....	30	.....	54	.....	33	.....	17	.....	.....

Daily discharge, in second-feet, of Silver Creek near Silver Lake, Oreg., for 1905-1907, 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.					24	29	199	177	48	19	15	15
2.					22	24	210	210	41	19	13	13
3.					56	38	245	257	41	19	11	13
4.					56	64	147	352	48	22	11	13
5.					68	52	117	368	41	24	11	13
6.					64	52	107	269	35	26	13	15
7.					52	41	117	221	35	19	11	13
8.					41	29	147	188	29	22	11	11
9.					41	26	177	188	41	19	11	11
10.					29	29	199	167	29	24	11	13
11.					15	24	157	147	26	22	11	11
12.					24	22	316	107	26	19	13	11
13.					26	24	245	107	24	19	13	11
14.					26	41	269	107	29	19	11	11
15.					24	98	295	98	26	15	11	11
16.				30	78	147	309	107	29	13	11	13
17.				84	107	167	337	89	29	15	13	11
18.				117	102	98	309	64	29	13	11	11
19.				107	48	56	257	127	38	13	11	11
20.				157	44	60	257	89	35	15	11	13
21.				210	35	41	177	89	29	13	13	13
22.				147	26	52	157	72	24	15	13	13
23.				89	26	41	167	64	24	17	11	13
24.				72	26	41	257	64	22	15	11	13
25.				44	19	107	221	48	19	15	13	13
26.				29	26	117	309	56	22	13	15	15
27.				64	24	167	295	56	19	13	15	13
28.				38	35	199	257	64	19	13	13	13
29.				19	199	210	48	19	15	11	13	13
30.				26	107	182	89	19	15	11	13	13
31.				26	194	48	15	11	11	13	13	13
1909-10.												
1.	13	15	80	22	44	227	167	84	29	24	17	15
2.	13	13	68	15	50	323	117	80	26	24	17	15
3.	15	13	68	80	50	473	117	80	26	24	17	15
4.	13	13	44	117	60	394	112	80	24	22	17	15
5.	15	13	44	98	60	323	157	72	24	22	17	15
6.	15	11	48	48	60	376	167	64	24	19	17	15
7.	15	11	44	19	60	462	167	64	24	19	17	15
8.	13	11	89	15	60	451	257	64	24	19	15	15
9.	13	13	44	15	60	204	337	60	24	19	15	15
10.	13	13	41	15	44	451	344	56	24	19	15	15
11.	13	13	41	15	52	540	227	48	24	19	15	15
12.	15	11	41	15	72	309	167	44	24	19	15	15
13.	15	13	38	17	76	316	167	41	24	19	15	15
14.	15	22	35	15	76	330	147	38	24	17	15	15
15.	13	29	41	15	38	323	137	38	24	17	15	15
16.	15	32	64	15	52	337	137	38	24	17	15	17
17.	15	26	48	15	52	330	137	38	24	17	15	17
18.	11	29	48	17	68	337	147	35	24	17	15	26
19.	11	32	26	15	80	394	137	35	24	17	15	29
20.	11	41	26	17	76	360	127	35	22	17	15	41
21.	11	72	29	19	72	352	127	35	22	17	16	32
22.	11	127	41	194	60	309	127	35	22	17	15	29
23.	11	865	52	137	44	257	107	35	22	17	15	24
24.	11	652	44	117	282	227	107	32	22	17	15	19
25.	11	540	52	107	44	172	98	32	22	17	15	15
26.	11	473	32	94	52	227	98	29	22	17	15	15
27.	11	368	29	56	38	182	102	29	22	17	15	15
28.	13	98	15	56	68	157	98	29	22	17	15	15
29.	11	107	19	44	.....	157	76	29	22	17	15	15
30.	11	112	29	56	.....	172	76	29	22	17	15	15
31.	13	.....	26	52	.....	157	.....	29	.....	17	15	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1905, fairly well defined; 1906, well defined above 50 second-feet; 1907 to 1910, fairly well defined. Open-channel rating curve applied throughout the years 1905 and 1903; values for the winter months probably somewhat too large. The following estimates and corrections have been made: Jan. 1-16, 1909, discharge estimated 30 second-feet; gage heights Dec. 16, 1909, to Feb. 1, 1910, reduced 0.2 foot before applying rating curve, to allow for obstruction of channel by ice. Discharge Feb. 2-8 interpolated on account of ice jam.

Monthly discharge of Silver Creek near Silver Lake, Oreg., for 1905-1907, 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
January.....	70	24	36.8	2,260	C.
February.....	137	21	43.9	2,440	A.
March.....	155	54	73.9	4,540	A.
April.....	203	46	89.9	5,350	A.
May.....	87	27	47.2	2,900	A.
June.....	39	21	27.8	1,650	A.
July.....	21	13	16.7	1,030	B.
August.....	19	15	17.1	1,050	B.
September.....	19	15	15.4	916	B.
The period.....				22,100	
1905-6.					
October.....	21	15	15.7	965	B.
November.....	42	13	21.4	1,270	B.
December.....	36	13	21.6	1,330	B.
January.....	50	17	24.2	1,490	C.
February.....	78	7	27.8	1,540	C.
March.....	210	10	40.4	2,480	B.
April.....	530	57	320	19,000	A.
May.....	245	43	118	7,260	A.
June.....	107	21	45.8	2,730	A.
July.....	21	12	15.4	947	B.
August.....	15	12	12.8	787	B.
September.....	15	12	12.6	750	B.
The year.....	530	7	56.3	40,500	
1906-7.					
October.....	13	12	12.1	744	B.
November.....	26	5	12.9	768	B.
December.....	102	5	20.5	1,260	C.
January.....	64		^a 30.0	1,840	D.
February.....	706	64	201	11,200	B.
March.....	1,800	35	189	11,600	B.
The period.....				27,400	
1909.					
January.....	210	19	55.1	3,390	C.
February.....	107	15	41.6	2,310	B.
March.....	199	22	77.0	4,730	B.
April.....	337	107	222	13,200	B.
May.....	368	48	133	8,180	B.
June.....	48	19	27.5	1,640	B.
July.....	26	13	17.3	1,060	B.
August.....	15	11	12.0	738	B.
September.....	15	11	12.5	744	B.
The period.....				36,000	
1909-10.					
October.....	15	11	12.8	787	B.
November.....	865	11	126	7,500	B.
December.....	80	15	43.4	2,670	C.
January.....	194	15	49.4	3,040	C.
February.....	282	38	66.1	3,670	C.
March.....	473	157	311	19,100	C.
April.....	344	76	150	8,930	B.
May.....	84	29	46.4	2,850	B.
June.....	29	22	23.6	1,400	B.
July.....	24	17	18.5	1,140	B.
August.....	17	15	15.5	953	B.
September.....	41	15	18.3	1,000	B.
The year.....	473	11	73.4	53,100	

^a Estimated.

BRIDGE CREEK NEAR SILVER LAKE, OREG.

Location.—In the SW. $\frac{1}{4}$ sec. 20, T. 28 S., R. 14 E., at bridge 2 miles west of town of Silver Lake.

Records presented.—January 21, 1905, to July 21, 1906.

Drainage area.—45 square miles.

Gage.—Vertical staff attached to bridge.

Channel.—Sand and gravel; somewhat shifting.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Affected by ice.

Artificial control.—Temporary dam below backs water up to gage.

Accuracy.—Records fair.

Discharge measurements of Bridge Creek near Silver Lake, Oreg., in 1905-6, 1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 24	Ivan Landes	2.05	4.0	Apr. 9	Ivan Landis	2.39	10
Feb. 22	.....do.....	2.05	2.7	May 29	.....do.....	2.52	10
Mar. 17	.....do.....	2.00	2.8	June 22	Stevens and Landes....	2.74	19
May 31	.....do.....	2.72	13.9				
June 15	.....do.....	2.79	15.0	1910.			
Nov. 11	.....do.....	2.05	.8	Sept. 24	Allen and Davenport...	1.60	a 0.4

^a Estimated.

Daily gage height, in feet, of Bridge Creek near Silver Lake, Oreg., for 1905-6.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1					1.95	1.9	1.95	2.4	2.7	2.2		2.03
2					2.0	1.9	1.95	2.45	2.7	2.2		2.03
3					2.0	1.9	2.0	2.4	2.7	2.2		2.02
4					2.0	1.9	2.0	2.4	2.7	2.15		2.02
5					1.95	1.95	1.8	2.4	2.7	2.1		2.01
6					1.95	1.95	1.8	2.4	2.7	2.0		2.02
7					1.95	1.95	1.85	2.2	2.7		1.94	2.01
8					1.9	1.95	1.85	2.1	2.7		1.93	2.01
9					2.0	1.90	1.85	2.1	2.7		1.94	2.01
10					2.2	1.95	1.9	2.1	2.75		1.92	2.01
11					1.95	1.95	1.9	2.15	2.75		1.9	2.01
12					2.2	1.95	1.95	2.1	2.8		1.9	2.01
13					2.2	1.95	1.95	2.1	2.8		1.92	2.01
14					2.2	2.0	1.95	2.1	2.8		1.92	2.02
15					2.2	2.0	2.0	2.4	2.75		1.9	2.02
16					2.4	2.0	2.0	2.4	2.7		1.92	2.01
17					2.4	2.0	2.0	2.65	2.7		1.95	2.01
18					2.4	2.0	2.0	2.65	2.7		1.98	2.01
19					2.4	2.0	2.0	2.65	2.6		1.96	2.02
20						2.0	1.95	2.65	2.55		1.98	2.02
21				2.3		2.0	1.95	2.65	2.5		1.98	2.02
22				2.3		2.0	1.95	2.65	2.5		2.00	2.01
23				2.15		2.0	1.95	2.6	2.4		1.99	2.01
24				2.2	2.0	2.0	1.95	2.6	2.4		1.98	2.02
25				2.1	1.95	2.0	1.95	2.55	2.35		2.0	2.03
26				2.05	2.0	2.0	2.3	2.6	2.3		2.0	2.03
27				2.0	1.9	2.0	2.4	2.65	2.3		2.04	2.03
28				2.1	1.9	2.0	2.3	2.65	2.25		2.03	2.02
29				2.0		1.9	2.3	2.7	2.2		2.03	2.03
30				1.95		1.95	2.4	2.7	2.2		2.04	2.03
31				1.95		1.95		2.7			2.04	

Daily gage height, in feet, of Bridge Creek near Silver Lake, Oreg., for 1905-6—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	2.03	2.03	2.1	2.6	2.6	2.5	2.31	2.89	2.65	2.73		
2.	2.03	2.02	2.1	2.6	2.6	2.6	2.31	3.0	2.65	2.75		
3.	2.04	2.03	1.9	2.6	2.6	2.5	2.3	2.98	2.66	2.75		
4.	2.05	2.03	1.9	2.6	2.7	2.5	2.32	2.95	2.67	2.83		
5.	2.06	2.02	1.9	2.6	2.7	2.5	2.32	3.0	2.7	2.85		
6.	2.06	2.03	1.9	2.6	2.7	2.5	2.32	2.98	2.7	2.89		
7.	2.06	2.03	2.0	2.7	2.8	2.5	2.32	2.98	2.75	2.85		
8.	2.04	2.03	1.9	2.7	2.8	2.4	2.32	3.0	2.8	2.6		
9.	2.04	2.03	1.9	2.7	2.8	2.4	2.33	2.9	2.83	2.59		
10.	2.03	2.03	2.01	2.7	2.8	2.4	2.5	2.98	2.75	2.6		
11.	2.04	2.03	2.01	2.7	2.8	2.5	2.5	2.8	2.75	2.58		
12.	2.03	2.03	2.01	2.8	2.8	2.5	2.52	2.85	2.76	2.56		
13.	2.04	2.03	2.1	2.8	2.8	2.6	2.45	2.8	2.76	2.56		
14.	2.04	2.03	2.1	2.8	2.7	2.6	2.35	2.79	2.76	2.54		
15.	2.03	2.02	2.1	2.8	2.7	2.6	2.33	2.83	2.76	2.4		
16.	2.03	2.03	2.1	2.8	2.7	2.6	2.33	2.8	2.75	2.4		
17.	2.02	2.03	2.3	2.8	2.8	2.6	2.34	2.85	2.78	2.3		
18.	2.02	2.03	2.3	2.8	2.7	2.5	2.34	2.83	2.79	2.3		
19.	2.02	2.1	2.3	2.8	2.7	2.4	2.35	2.8	2.8	2.28		
20.	2.02	2.1	2.3	2.8	2.7	2.4	2.34	2.7	2.82	2.27		
21.	2.02	2.1	2.4	2.7	2.7	2.4	2.34	2.68	2.82	2.27		
22.	2.01	2.1	2.4	2.7	2.7	2.3	2.4	2.65	2.8			
23.	2.01	2.11	2.4	2.7	2.7	2.15	2.5	2.65	2.79			
24.	2.02	2.11	2.5	2.6	2.7	2.2	2.65	2.64	2.75			
25.	2.02	2.11	2.5	2.6	2.5	2.4	2.68	2.63	2.75			
26.	2.02	2.1	2.5	2.5	2.5	2.4	2.7	2.6	2.74			
27.	2.01	2.1	2.6	2.5	2.5	2.4	2.68	2.64	2.73			
28.	2.01	2.1	2.6	2.6	2.6	2.4	2.6	2.64	2.7			
29.	2.02	2.09	2.6	2.6		2.5	2.8	2.63	2.72			
30.	2.03	2.09	2.6	2.6		2.5	2.85	2.64	2.7			
31.	2.03		2.6	2.6		2.5		2.65				

NOTE.—Increase in gage heights after Apr. 26, 1909, caused by backwater from a dam. Ice present Dec. 17, 1905, to Mar. 7, 1906.

Daily discharge, in second-feet, of Bridge Creek near Silver Lake, Oreg., for 1905-6.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.					2.0	1.2	2.0	6.6	12.9	3.0		0.7
2.					2.8	1.2	2.0	7.6	12.9	3.0		.7
3.					2.8	1.2	2.8	6.6	12.9	3.0		.7
4.					2.8	1.2	2.8	6.6	12.9	2.2		.7
5.					2.0	2.0	.8	6.6	12.9	1.3		.6
6.					2.0	2.0	.8	6.6	12.9	.6		.7
7.					2.0	2.0	1.0	3.0	12.9		0.4	.6
8.					1.2	2.0	1.0	1.3	12.9		.3	.6
9.					2.8	1.2	1.0	1.3	12.9		.4	.6
10.					6.3	2.0	1.2	1.3	14.0		.2	.6
11.					2.0	2.0	1.2	2.2	14.0		.2	.6
12.					6.3	2.0	2.0	1.3	15.2		.2	.6
13.					6.3	2.0	2.0	1.3	15.2		.2	.6
14.					6.3	2.8	2.0	1.3	15.2		.2	.7
15.					6.3	2.8	2.8	6.6	14.0		.2	.7
16.					10.0	2.8	2.8	6.6	12.9		.2	.6
17.					10.0	2.8	2.8	11.8	12.9		.4	.6
18.					10.0	2.8	2.8	11.8	12.9		.5	.6
19.					10.0	2.8	2.8	11.8	10.7		.4	.7
20.						2.8	2.0	11.8	9.6		.5	.7
21.							2.0	11.8	8.6		.5	.7
22.				8.1		2.8	2.0	11.8	8.6		.6	.6
23.				5.4		2.8	2.0	10.7	6.6		.6	.6
24.				6.3	2.8	2.8	2.0	10.7	6.6		.5	.7
25.				4.5	2.0	2.8	2.0	9.6	5.6		.6	.7
26.				3.6	2.8	2.8	4.7	10.7	4.7		.6	.7
27.				2.8	1.2	2.8	6.6	11.8	4.7		.8	.7
28.				4.5	1.2	2.8	4.7	11.8	3.8		.7	.7
29.				2.8		1.2	4.7	12.9	3.0		.7	.7
30.				2.0		2.0	6.6	12.9	3.0		.8	.7
31.				2.0		2.0		12.9			.8	

Daily discharge, in second-feet, of Bridge Creek near Silver Lake, Oreg., for 1905-6—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	0.7	0.7	1.3	.....	.....	.....	7	25	16	18	.....	.....
2.....	.7	.7	1.3	.....	.....	.....	7	29	16	19	.....	.....
3.....	.8	.7	.2	.....	.....	.....	7	28	16	19	.....	.....
4.....	.8	.7	.2	.....	.....	.....	7	27	16	22	.....	.....
5.....	.9	.7	.2	.....	.....	.....	7	29	17	23	.....	.....
6.....	.9	.7	.2	.....	.....	.....	7	28	17	25	.....	.....
7.....	.9	.7	.6	.....	.....	.....	7	28	19	23	.....	.....
8.....	.8	.7	.2	.....	.....	9	7	29	21	14	.....	.....
9.....	.8	.7	.2	.....	.....	9	8	25	22	14	.....	.....
10.....	.7	.7	.6	.....	.....	9	11	28	19	14	.....	.....
11.....	.8	.7	.6	.....	.....	11	11	21	19	13	.....	.....
12.....	.7	.7	.6	.....	.....	11	12	23	19	13	.....	.....
13.....	.8	.7	1.3	.....	.....	14	10	21	19	13	.....	.....
14.....	.8	.7	1.3	.....	.....	14	8	21	19	12	.....	.....
15.....	.7	.7	1.3	.....	.....	14	8	22	19	9	.....	.....
16.....	.7	.7	1.3	.....	.....	14	8	21	19	9	.....	.....
17.....	.7	.7	.....	.....	.....	14	8	23	20	7	.....	.....
18.....	.7	.7	.....	.....	.....	11	8	23	21	7	.....	.....
19.....	.7	1.3	.....	.....	.....	9	8	21	21	7	.....	.....
20.....	.7	1.3	.....	.....	.....	9	8	17	22	6	.....	.....
21.....	.7	1.3	.....	.....	.....	9	8	16	22	6	.....	.....
22.....	.6	1.3	.....	.....	.....	7	9	16	21	.....	.....	.....
23.....	.6	1.5	.....	.....	.....	4	11	16	21	.....	.....	.....
24.....	.7	1.5	.....	.....	.....	5	16	16	19	.....	.....	.....
25.....	.7	1.5	.....	.....	.....	9	16	15	19	.....	.....	.....
26.....	.7	1.3	.....	.....	.....	9	17	14	19	.....	.....	.....
27.....	.6	1.3	.....	.....	.....	9	16	16	18	.....	.....	.....
28.....	.6	1.3	.....	.....	.....	9	14	16	17	.....	.....	.....
29.....	.7	1.2	.....	.....	.....	11	21	15	18	.....	.....	.....
30.....	.7	1.2	.....	.....	.....	11	23	16	17	.....	.....	.....
31.....	.7	.....	.....	.....	.....	11	.....	16	.....	.....	.....	.....

NOTE.—Daily discharge determined from rating curves poorly defined for Jan. 1 to Apr. 25, 1905, and for 1906; fairly well defined Apr. 26 to Dec. 31, 1905.

Monthly discharge of Bridge Creek near Silver Lake, Oreg., for 1905-6.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1905.					
March.....	2.8	1.2	2.23	137	D.
April.....	6.6	.8	2.53	151	D.
May.....	12.9	1.3	7.79	479	C.
June.....	15.2	3.0	10.6	631	C.
July 1-6.....	3.0	.6	2.18	26	D.
August 7-31.....	.8	.2	.46	23	D.
September.....	.7	.6	.66	39	D.
1905-6.					
October.....	.9	.6	.73	45	D.
November.....	1.5	.7	.95	57	C.
December.....	.....	.....	a 1.0	61	D.
January.....	.....	.....	a 2.0	123	D.
February.....	.....	.....	a 3.0	167	D.
March.....	14	.....	a 8.3	510	D.
April.....	23	7	10.5	625	C.
May.....	29	14	21.3	1,310	C.
June.....	22	16	18.9	1,120	C.
July 1-21.....	25	6	14.0	583	D.
The period.....	.....	.....	.....	4,600	.....

a Estimated on account of ice.

BUCK¹ CREEK NEAR SILVER LAKE, OREG.

Location.—In sec. 17, T. 27 S., R. 14 E., at the county highway bridge 3 miles southwest of Silver Lake post office.

Records presented.—January 21, 1905, to July 19, 1906; January 20, 1909, to September 24, 1910.

Drainage area.—77 square miles.

Gage.—Inclined staff.

Channel.—Probably shifts; bed composed of sand and gravel.

Discharge measurements.—Made by wading or from bridge.

Winter flow.—Affected by ice.

Diversions.—Dam above station and several brush dams put in each year below station are used to divert water in small ditches or for flooding hay lands.

Accuracy.—Approximate estimates 1905 to 1910 obtained by correcting gage heights for effect of backwater from temporary dams below.

Discharge measurements of Buck Creek near Silver Lake, Oreg., in 1905-6, 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1905.		<i>Feet.</i>	<i>Sec.-ft.</i>	1906.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 24	Ivan Landes.....	4.15	14.4	Apr. 9	Ivan Landes.....	4.48	27
Feb. 23	.....do.....	4.60	23.6	May 29	.....do.....	4.87	30
Mar. 17	.....do.....	4.00	11.7	June 22	Stevens and Landes...	^a 6.23	65
May 31	.....do.....	5.48	50.0				
June 15	.....do.....	5.25	46.0	1909.			
Aug. 7	.....do.....	3.90	6.3	Apr. 28	R. B. Post.....	5.79	39.7
Oct. 4	.....do.....	3.85	5.0				
Oct. 24	.....do.....	3.92	6.4	1910.			
Nov. 11	.....do.....	4.03	6.8	Apr. 29	L. R. Allen.....	6.05	56.1
				Sept. 24	Allen and Davenport...	3.93	6.6

^a Observer's gage reading 5.35 feet, has been used in computations.

NOTE.—Most of the low-water measurements have been made by wading at different sections.

¹ Called Bear Creek in previous reports.

Daily gage height, in feet, of Buck Creek near Silver Lake, Oreg., for 1905-6 and 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1.					4.1	3.95	4.1	5.0	5.45	5.05	3.9	3.8
2.					4.1	4.35	4.0	4.95	5.4	5.0	3.9	3.8
3.					4.1	4.55	3.95	4.9	5.45	4.95	3.85	3.8
4.					4.1	4.0	3.95	4.9	5.45	4.95	3.85	3.8
5.					4.1	4.0	3.95	4.9	5.35	4.9	3.8	3.8
6.					4.1	3.95	4.0	4.95	5.25	4.9	3.9	3.8
7.					4.1	3.95	4.0	4.95	5.2	4.9	3.9	3.8
8.					4.1	3.95	4.0	5.05	5.4	4.85	3.9	3.8
9.					4.1	3.95	4.0	5.05	5.4	4.8	3.85	3.8
10.					4.1	3.95	4.0	5.0	5.4	4.8	3.85	3.8
11.					4.1	3.95	4.0	4.95	5.45	4.8	3.8	3.8
12.					4.1	3.95	4.0	5.0	5.45	4.75	3.8	3.8
13.					4.1	4.0	4.0	4.95	5.4	4.75	3.8	3.8
14.					4.1	4.0	4.85	4.95	5.35	4.8	3.8	3.8
15.					4.1	3.95	4.85	5.05	5.3	4.8	3.8	3.8
16.					4.1	4.0	4.85	5.25	5.2	4.8	3.85	3.8
17.					4.55	4.0	4.85	5.05	5.05	4.8	3.85	3.8
18.					4.55	4.0	4.8	5.15	5.05	4.8	3.85	3.75
19.					4.5	4.0	4.8	5.15	5.0	4.8	3.85	3.75
20.					4.85	4.0	4.8	5.1	4.95	3.9	3.8	3.75
21.				4.2	5.0	4.0	4.8	5.0	5.35	3.9	3.8	3.75
22.				4.2	4.8	4.0	4.8	4.95	5.35	3.9	3.8	3.75
23.				4.2	4.6	4.05	4.75	4.9	5.3	3.9	3.8	3.75
24.				4.4	4.4	3.95	4.8	5.0	5.3	3.9	3.8	3.75
25.				4.4	4.4	3.95	4.95	5.1	5.25	3.9	3.8	3.75
26.				4.2	4.0	3.95	4.9	5.2	5.2	3.9	3.8	3.75
27.				4.2	4.1	3.95	4.9	5.4	5.2	3.9	3.8	3.75
28.				4.1	4.0	3.95	4.95	5.4	5.3	3.9	3.8	3.75
29.				4.1		3.95	4.75	5.4	5.25	3.9	3.8	3.75
30.				4.1		3.85	5.0	5.5	5.05	3.9	3.8	3.75
31.				4.1		3.75		5.5		3.9	3.8	
1905-6.												
1.	3.85	3.9	3.9	4.2	4.2	4.2	4.3	5.1	4.9	5.15		
2.	3.85	3.9	3.9	4.2	4.2	4.1	4.1	5.2	4.95	5.1		
3.	3.85	3.9	3.9	4.2	4.0	4.1	4.1	5.3	4.95	5.2		
4.	3.85	3.9	3.9	4.2	4.0	4.1	4.4	5.35	5.35	5.2		
5.	3.85	3.6	3.9	4.2	4.0	4.1	4.4	5.4	5.2	5.3		
6.	3.85	3.6	3.9	4.2	4.0	4.1	4.6	5.4	5.15	5.2		
7.	3.95	3.8	3.9	4.2	4.2	4.1	4.6	5.45	5.0	5.2		
8.	3.95	3.95	3.9	4.2	4.2	4.1	4.3	5.5	4.95	5.2		
9.	3.95	4.1	3.9	4.2	4.2	4.2	4.2	5.6	5.35	5.0		
10.	3.9	4.1	3.7	4.2	4.2	4.3	4.0	5.8	5.35	5.0		
11.	3.9	4.1	3.65	4.2	4.2	4.3	4.25	5.9	5.4	5.0		
12.	3.9	4.0	3.65	4.2	4.2	4.3	4.25	5.05	5.75	4.85		
13.	3.9	4.0	3.7	4.2	4.2	4.3	4.25	5.4	5.5	4.85		
14.	3.9	3.9	3.85	4.2	4.2	4.3	4.3	5.4	5.45	4.8		
15.	3.9	3.9	3.9	4.2	4.2	4.3	4.35	5.3	5.4	4.4		
16.	3.9	3.9	3.95	4.2	4.2	4.1	4.4	5.3	5.75	4.3		
17.	3.9	3.9	3.95	4.2	4.2	4.0	4.35	5.2	5.6	4.4		
18.	3.9	3.85	3.95	4.2	4.4	4.0	4.3	5.1	5.5	4.2		
19.	3.9	3.75	4.0	4.2	4.4	4.1	4.9	5.0	5.5	4.1		
20.	3.9	3.7	4.0	4.2	5.0	4.1	5.0	5.2	5.4			
21.	3.9	3.7	4.1	4.2	5.0	4.1	5.15	5.05	5.4			
22.	3.9	3.6	4.1	4.2	5.0	4.2	5.2	4.95	5.35			
23.	3.9	3.65	4.0	4.2	4.4	4.2	5.2	4.7	5.2			
24.	3.9	3.7	3.6	4.2	4.4	5.15	5.0	4.7	5.2			
25.	3.9	3.7	4.0	4.2	4.4	5.2	4.95	5.0	5.2			
26.	3.9	3.85	4.6	4.2	4.4	5.1	4.95	5.1	5.35			
27.	3.9	3.85	4.6	4.2	4.4	4.6	4.9	5.1	5.5			
28.	3.9	3.9	4.2	4.2	4.4	4.5	5.0	5.1	5.3			
29.	3.9	3.9	4.2	4.2		4.4	5.0	5.0	5.05			
30.	3.9	3.9	4.2	4.2		5.1	5.0	4.85	5.25			
31.	3.9		4.2	4.2		4.95		4.9				

Daily gage height, in feet, of Buck Creek near Silver Lake, Oreg., 1905-6 and 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	
1909.													
1					4.6	4.1	4.4	5.7	6.1	5.9	3.9	3.8	
2					4.4	4.1	4.4	5.7	6.3	5.9	3.9	3.8	
3					6.1	4.2	4.5	5.7	6.3	5.9	3.9	3.8	
4					4.8	4.3	4.6	5.8	6.3	5.9	3.9	3.8	
5					4.5	4.0	4.5	5.9	6.3	5.9	3.9	3.8	
6					4.2	4.1	4.5	5.9	6.3	5.9	3.9	3.8	
7					4.3	4.1	4.4	5.9	6.2	5.9	3.9	3.8	
8					4.3	4.2	4.3	5.9	6.1	5.8	3.9	3.8	
9					4.2	4.0	4.3	5.9	6.1	5.8	3.9	3.8	
10					4.2	4.0	4.5	5.9	6.1	5.8	3.9	3.8	
11						4.3	4.0	4.6	5.9	6.1	5.8	3.9	3.8
12				3.9	4.3	4.0	4.6	5.9	6.1	5.8	3.9	3.8	
13				3.9	4.3	4.0	4.6	5.8	6.2	5.7	3.9	3.8	
14				3.9	4.2	4.0	4.7	5.8	6.2	5.7	3.9	3.8	
15				4.2	4.2	4.6	4.7	5.8	6.2	5.7	3.8	3.8	
16				4.7	5.3	4.6	4.7	5.8	6.2	5.7	3.8	3.8	
17				5.2	7.5	4.6	5.9	5.9	6.2	5.7	3.8	3.8	
18				6.0	5.9	4.1	5.8	5.9	6.2	4.3	3.8	3.8	
19				5.7	4.9	4.0	5.8	5.9	6.2	4.2	3.8	3.8	
20				7.6	4.5	4.0	5.8	5.9	6.2	4.1	3.8	3.8	
21				8.0	4.0	4.0	5.7	5.9	6.2	4.1	3.8	3.8	
22				6.2	4.0	4.0	5.7	5.9	6.0	4.1	3.8	3.8	
23				6.4	3.9	4.0	5.7	5.9	6.0	4.1	3.8	3.8	
24				5.6	4.1	4.0	5.7	5.9	6.0	4.1	3.8	3.8	
25				4.9	3.8	4.4	5.7	5.9	6.0	4.0	3.8	3.8	
26				4.6	4.0	4.4	5.8	6.0	6.0	4.0	3.8	3.8	
27				4.2	4.1	4.3	5.8	6.0	6.0	4.0	3.8	3.8	
28				4.6	4.0	4.4	5.8	6.0	5.9	4.0	3.8	3.8	
29				4.2		4.6	5.7	6.0	5.9	4.0	3.8	3.8	
30				4.1		4.4	5.7	6.0	5.9	4.0	3.8	3.8	
31				4.4		4.2		6.1		4.0	3.8		
1909-10.													
1	3.8	3.9	4.6	4.5	5.5	7.7	4.6	5.9	6.0	5.5			
2	3.8	3.9	4.6	4.5	5.0	7.5	4.6	6.0	6.0	5.8			
3	3.8	3.9	4.6	4.6	4.5	6.0	4.5	6.0	6.0	5.8			
4	3.8	3.9	4.6	4.6	4.4	6.1	4.4	6.0	6.0	5.6			
5	3.8	3.9	4.4	4.6	4.4	5.9	4.4	5.9	6.0	5.6			
6	3.8	3.9	4.4	4.6	5.0	5.3	4.4	5.8	6.0	5.6			
7	3.8	3.9	4.6	4.6	5.0	5.0	4.4	5.9	5.9				
8	3.8	3.9	4.4	4.6	5.0	5.0	4.4	5.9	5.9				
9	3.8	3.9	4.7	4.6	4.8	4.8	4.4	6.1	5.9				
10	3.8	3.9	4.6	5.0	4.8	4.8	4.5	6.1	5.9				
11	3.8	3.9	4.4	5.0	4.7	4.8	4.5	6.0	5.9				
12	3.8	3.9	4.4	4.4	4.7	4.9	4.5	6.0	5.9				
13	3.8	3.9	4.4	4.4	5.7	4.9	4.5	6.0	5.9				
14	3.8	3.9	4.2	4.4	7.0	5.0	4.5	6.0	5.9				
15	3.8	3.9	4.0	4.4	5.6	5.0	4.5	6.0	5.9				
16	3.8	3.9	4.0	4.4	4.7	5.0	5.8	6.0	5.9				
17	3.8	4.0	4.0	4.4	4.5	5.0	5.9	6.0	5.9				
18	3.8	4.0	4.0	4.4	4.5	5.0	5.9	6.0	5.9				
19	3.8	4.0	4.2	4.4	4.5	5.0	6.0	6.0	5.8				
20	3.8	4.3	4.2	4.4	4.6	5.1	6.0	6.0	5.8				
21	3.8	4.5	4.2	4.4	4.5	5.1	6.0	6.0	5.8				
22	3.8	5.0	4.2	4.4	4.5	5.1	6.0	6.0	5.8				
23	3.8	8.4	4.2	5.0	4.5	5.1	6.0	6.0	5.8				
24	3.9	7.1	4.2	6.8	7.0	5.2	6.0	6.0	5.8			3.93	
25	3.9	6.1	4.2	5.2	6.8	5.1	6.1	6.0	5.8				
26	3.9	5.4	4.3	5.2	5.9	5.1	6.2	6.0	5.7				
27	3.9	5.0	4.3	4.7	5.6	4.9	6.2	6.0	5.7				
28	3.9	4.9	4.4	4.7	8.4	4.7	6.1	6.0	5.6				
29	3.9	4.7	4.5	4.7		4.7	6.0	6.0	5.5				
30	3.9	4.6	4.5	4.7		4.6	6.0	6.0	5.5				
31	3.9		4.5	6.4		4.6		6.0					

NOTE.—Gage height increased by backwater from dam Apr. 14 to July 19; dam removed July 10. Ice condition last half of December, 1905. Creek frozen Jan. 1 to about Mar. 20, 1906, the ice reaching a thickness of 1.1 feet; backwater from irrigation diversion dam after Apr. 19, 1906. Backwater from irrigation dam Apr. 17 to July 17, 1909. Creek frozen Jan. 1 to Mar. 1, 1910, and during part of December preceding; Feb. 6, 1910, ice about 20 inches thick; relation of gage height to discharge probably little affected by ice after the thaw at the end of February.

The rise Apr. 16 was caused by backwater from a temporary brush dam which is placed each year to divert water into canals. The dam was not removed until after records were suspended July 6. No records July 6 to Sept. 24. The maximum stage was 10.0 feet at 8 p. m. Feb. 24.

Daily discharge, in second-feet, of Buck Creek near Silver Lake, Oreg., for 1905-6, 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905.												
1					12	8	12	19	50	27	6	4
2					12	21	9	17	48	25	6	4
3					12	29	8	17	50	21	5	4
4					12	9	8	17	52	21	5	4
5					12	9	8	17	48	19	4	4
6					12	8	9	19	42	19	6	4
7					12	8	9	19	40	17	6	4
8					12	8	9	25	50	15	6	4
9					12	8	9	25	50	14	5	4
10					12	8	9	23	52	12	5	4
11					12	8	9	21	55	12	4	4
12					12	8	9	23	55	9	4	4
13					12	9	9	23	52	9	4	4
14					12	9	9	23	52	9	4	4
15					12	8	9	27	50	9	4	4
16					12	9	9	35	45	9	5	4
17					29	9	9	27	35	8	5	4
18					29	9	9	31	35	8	5	3.5
19					27	9	9	31	33	6	5	3.5
20					42	9	9	25	31	6	4	3.5
21				15	50	9	9	27	48	6	4	3.5
22				15	40	9	9	25	48	6	4	3.5
23				15	31	10	9	23	45	6	4	3.5
24				23	23	8	10	27	42	6	4	3.5
25				23	23	8	15	31	40	6	4	3.5
26				15	9	8	14	35	38	6	4	3.5
27				15	12	8	14	45	35	6	4	3.5
28				12	9	8	17	45	40	6	4	3.5
29				12		8	10	48	38	6	4	3.5
30				12		5	19	52	27	6	4	3.5
31				12		4		52		6	4	
1905-6.												
1	5	6	6	8	8	8	19	31	33	58		
2	5	6	6	8	8	6	12	35	35	55		
3	5	6	6	8	4	6	12	40	35	60		
4	5	6	6	8	4	6	23	45	55	60		
5	5	2	6	8	4	6	23	48	48	65		
6	5	2	6	8	4	6	31	48	48	60		
7	8	4	6	8	8	6	31	50	40	60		
8	8	4	6	8	8	6	19	52	38	60		
9	8	5	6	8	8	8	15	58	58	50		
10	6	6	3	8	8	10	9	71	58	50		
11	6	7	2.5	8	8	10	17	77	62	50		
12	6	6	2.5	8	8	10	17	62	83	42		
13	6	6	3	8	8	10	17	50	68	42		
14	6	6	5	8	8	10	19	50	65	40		
15	6	6	6	8	8	10	21	45	62	23		
16	6	6	6	8	8	6	23	45	83	19		
17	6	6	6	8	8	4	21	40	77	23		
18	6	5	6	8	12	4	19	38	71	15		
19	6	3.5	6	8	12	6	19	33	71	12		
20	6	3	6	8	35	6	23	42	65	10		
21	6	3	6	8	35	12	29	35	65	10		
22	6	2	6	8	35	15	33	31	62	10		
23	6	2.5	6	8	12	15	33	21	58	10		
24	6	3	6	8	12	58	25	23	58	10		
25	6	3	6	8	12	60	23	35	58	8		
26	6	5	7	8	12	55	23	40	65	8		
27	6	5	7	8	12	31	21	40	74	8		
28	6	6	7	8	12	27	27	40	62	8		
29	6	6	7	8		23	27	35	50	6		
30	6	6	7	8		55	27	29	60	6		
31	6		7	8		48		31		6		

Daily discharge, in second-feet, of Buck Creek near Silver Lake, Oreg., for 1905-6,
1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1				6	31	12	23	35	65	35	6	4
2				6	23	12	23	35	77	35	6	4
3				6	115	15	27	35	77	35	6	4
4				6	40	19	31	45	77	35	6	4
5				6	27	9	27	50	77	35	6	4
6				6	15	12	27	50	77	35	6	4
7				6	19	12	23	50	65	35	6	4
8				6	19	15	19	50	60	31	6	4
9				6	15	9	19	50	60	27	6	4
10				6	15	9	27	50	60	27	6	4
11				6	19	9	31	50	60	27	6	4
12				6	19	9	31	50	60	27	6	4
13				6	19	9	31	45	65	23	6	4
14				6	15	9	35	45	65	23	6	4
15				15	15	31	35	45	65	23	4	4
16				35	65	31	35	45	65	19	4	4
17				60	213	31	35	50	60	19	4	4
18				108	101	12	31	55	60	19	4	4
19				89	45	9	31	55	60	15	4	4
20				220	27	9	31	55	60	12	4	4
21				249	9	9	31	55	60	12	4	4
22				122	9	9	31	55	50	12	4	4
23				136	6	9	31	55	50	12	4	4
24				83	12	9	31	55	50	12	4	4
25				45	4	23	31	55	50	9	4	4
26				31	9	23	40	60	45	9	4	4
27				15	12	19	40	60	45	9	4	4
28				31	9	23	40	60	40	9	4	4
29				15	-----	31	35	60	40	9	4	4
30				12	-----	23	40	60	40	9	4	4
31				23	-----	15	-----	65	-----	9	4	-----
1909-10.												
1	4	6	31	9	45	227	31	50	65	23	-----	-----
2	4	6	31	9	23	213	31	55	65	35	-----	-----
3	4	6	31	12	6	108	27	55	65	35	-----	-----
4	4	6	31	12	4	115	23	55	65	27	-----	-----
5	4	6	23	12	4	101	23	55	65	27	-----	-----
6	4	6	23	12	23	65	23	50	65	27	-----	-----
7	4	6	31	12	23	50	23	50	55	26	-----	-----
8	4	6	23	12	23	50	23	50	55	24	-----	-----
9	4	6	35	12	15	40	23	65	55	22	-----	-----
10	4	6	31	27	15	40	27	65	55	20	-----	-----
11	4	6	23	27	12	40	27	60	55	20	-----	-----
12	4	6	23	6	12	45	27	60	55	18	-----	-----
13	4	6	23	6	55	45	27	60	50	16	-----	-----
14	4	6	15	6	136	50	27	65	50	14	-----	-----
15	4	6	9	6	50	50	27	65	50	12	-----	-----
16	4	6	9	6	12	50	27	65	50	12	-----	-----
17	4	9	9	6	6	50	31	65	50	10	-----	-----
18	4	9	9	6	6	50	31	65	50	10	-----	-----
19	4	9	9	6	6	50	35	65	45	10	-----	-----
20	4	19	9	6	9	55	40	65	45	10	-----	-----
21	4	27	9	6	6	55	40	65	45	9	-----	-----
22	4	50	9	6	6	55	40	65	40	9	-----	-----
23	4	281	9	27	6	55	45	65	40	9	-----	-----
24	6	185	9	129	136	60	45	65	40	9	-----	6.6
25	6	115	9	35	122	55	50	65	40	9	-----	-----
26	6	71	9	35	101	55	60	65	35	8	-----	-----
27	6	50	9	15	83	45	60	65	35	8	-----	-----
28	6	45	9	15	281	35	55	65	31	8	-----	-----
29	6	35	9	15	-----	35	50	65	23	8	-----	-----
30	6	31	9	15	-----	31	50	65	23	6	-----	-----
31	6	-----	9	101	-----	31	-----	65	-----	6	-----	-----

NOTE.—Daily discharge for periods of unobstructed channel determination from a curve fairly well defined between 4 and 50 second-feet, but uncertain above on account of the lack of high-water measurements during winter floods.

Due allowance has been made for backwater caused by a temporary dam below the gage for the following periods: Apr. 18 to July 20, 1905; Apr. 19 to June 30, 1906; Apr. 17 to July 18, 1909; Apr. 16 to July 6, 1910. The correction curve is defined by the rise in stage when the dam is put in, the fall when it is removed, and by one or two measurements each year.

Corrections have been made for ice during the following periods, using the best data available: Nov. 8-13, Dec. 16-31, 1905; Jan. 1 to Mar. 20, 1906; Dec. 19-31, 1909; Jan. 1 to Feb. 24 and Dec. 19-31, 1910.

Discharge estimated July 20-31, 1906, Jan. 1-11, 1909, and July 7-31, 1910.

Monthly discharge of Buck Creek near Silver Lake, Oreg., for 1905-6, 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).
	Maximum.	Minimum.	Mean.	
1905.				
January.....			^a 15.0	922
February.....	50	9	18.4	1,020
March.....	29	4	9.3	572
April.....	19	8	10.2	607
May.....	52	17	28.2	1,730
June.....	55	27	44.2	2,630
July.....	27	6	11.0	676
August.....	6	4	4.6	283
September.....	4	3.5	3.78	225
The period.....				8,660
1905-6.				
October.....	8	5	6.0	369
November.....	7	2	4.77	284
December.....	7	2.5	5.74	353
January.....	8	8	8.0	492
February.....	35	4	11.1	616
March.....	60	4	17.5	1,080
April.....	33	9	21.9	1,300
May.....	77	21	42.6	2,620
June.....	83	33	58.9	3,500
July.....	65	6	34.5	2,120
The period.....				12,700
1909.				
January.....	249	6	44.3	2,720
February.....	213	4	33.0	1,830
March.....	31	9	15.4	947
April.....	40	19	30.7	1,830
May.....	65	35	51.1	3,140
June.....	77	40	59.5	3,540
July.....	35	9	20.9	1,290
August.....	6	4	4.9	301
September.....	4	4	4.0	238
The period.....				15,800
1909-10.				
October.....	6	4	4.5	277
November.....	281	6	34.4	2,050
December.....	35	9	17.0	1,050
January.....	129	6	19.6	1,210
February.....	281	4	43.8	2,430
March.....	227	31	64.7	3,980
April.....	60	23	34.9	2,080
May.....	65	50	61.3	3,770
June.....	65	23	48.7	2,900
July.....	35	6	15.7	965
August.....			^a 4.0	246
September.....			^a 6.0	357
The year.....	281		29.6	21,300

^a Estimated.

NOTE.—Values only approximate; some monthly means may be 25 per cent or more in error.

MALHEUR AND HARNEY LAKES DRAINAGE BASIN.

GENERAL FEATURES.

Malheur and Harney lakes, which are in Harney County, occupy a large basin lying in general 4,100 feet above sea level and rimmed by mountain ranges whose elevation is between 5,000 and 7,000 feet. They are connected by a small strait known as The Narrows, through which the water of Malheur flows into Harney Lake. For this reason the water of Malheur Lake is practically fresh, whereas that of Harney

Lake is alkaline. The average rainfall in the basin is about 10 inches; on the summit of the divide it is probably 18 inches or more.

The agricultural lands in this basin comprise nearly 700,000 acres of flat alluvial soil forming a circular valley surrounding the lakes and extending like fingers into the valleys of tributary streams.

The lower lands are more or less swampy and have for years been utilized as hay flats. During the spring months, when water is abundant, small rock-and-brush dams sufficiently high to cause the streams to overflow their banks are constructed at convenient points. Much of the meadow lands may thus be covered by a foot or more of running water during five or six weeks of the season. As the stream flow diminishes the swamp and hay lands gradually drain until the middle of July, when they are sufficiently dry to permit the cutting of hay.

Comparatively small areas are cultivated, and on these the crops are limited to rye, oats, and barley. The principal industry of the region has been stock raising, and this has afforded a ready market for all grain and hay that could be raised. During recent years, however, much of the hay lands have been taken as homesteads and the better lands are rapidly being developed.

The principal streams in this basin are Donner und Blitzen River, from the south, and Silvies River from the north, flowing into Malheur Lake; and Silver Creek, flowing from the northwest into Harney Lake. South of Silver Creek, in a flat valley, lies Silver Lake, a small playa which is supplied by overflow from Silver Creek. Donner und Blitzen River, with its principal tributaries, Keiger, McCoy, and Mud creeks, drain the western slope of Steens Mountain. This mountain, which is the most prominent topographic feature in the area, is a long timberless ridge extending northeast and southwest, with a crest length of 60 miles or more. The eastern slope forms an abrupt escarpment; the western slope, which forms a gradual ascent, is deeply cut by canyons, into which great quantities of snow are drifted each year, the most notable being the gorge of Keiger Creek. The snows melt gradually, and the flow of the streams draining the western slope of the mountain is maintained well into the summer. The flow in late fall and winter is maintained from springs.

Silvies River drains the northern part of the Malheur-Harney basin, rising in the heart of the Blue Mountains, flowing generally southward through a broken country to Harney Valley, which it traverses in a southeasterly direction, and emptying into swamp lands bordering the northern shores of Malheur Lake. A large part of its drainage area is heavily timbered. The stream is flashy, being subject to severe floods. The summer flow is small and comes mostly from Emigrant Creek, a tributary from the west.

Silver Creek heads in a spur of the Blue Mountains and flows southeastward through Silver Creek Valley into Harney basin. The upper part of its drainage area is well timbered, but the lower part is bare. The stream is subject to sudden floods and in summer its flow practically ceases.

Between Silvies River and Silver Creek and flowing in the same general direction is Sagehen Creek, a small stream heading in a spur of the Blue Mountains and draining a rough, broken country. It empties into the marsh surrounding the northern end of Malheur Lake near the point where Silvies River enters this marsh.

The eastern rim of Harney Valley is broken by a low pass known as Malheur Gap. Through this gap a drainage canal could be excavated that at the deepest part would not require a cut of more than 18 or 20 feet. This canal would carry the waters of the lakes into Malheur River by way of a tributary of the South Fork. Such a project was at one time begun, but riparian owners of the lake border feared that the absence of these large bodies of water would have an unwholesome effect on the climate of the basin. Accordingly an injunction was issued restraining the company from building the project.

MALHEUR LAKE AT NARROWS, OREG.

Location.—In sec. 26, T. 26 S., R. 31 E., at the highway bridge across the channel connecting Malheur and Harney lakes, a few hundred feet north of Narrows.

Records presented.—May 14, 1903, to July 21, 1906, and September 4-8, 1909.

Gage.—Vertical staff on highway bridge. The datum of this gage was 8.20 feet when installed in 1903, referred to a bench mark at the east end of the bridge, elevation 4,088 feet. Gage is on a relatively narrow portion of a section of Malheur Lake.

Daily gage height, in feet, of Malheur Lake at Narrows, Oreg., for 1903-1906, 1909.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....		5.60	5.30	4.60	3.30	16.....	5.60	5.60	5.00	4.10	2.60
2.....		5.60	5.30	4.50	3.30	17.....	5.60	5.50	5.00	4.10	2.50
3.....		5.60	5.30	4.50	3.20	18.....	5.60	5.50	5.00	4.00	2.50
4.....		5.60	5.30	4.50	3.20	19.....	5.60	5.50	4.90	4.00	2.40
5.....		5.60	5.20	4.40	3.10	20.....	5.60	5.50	4.90	3.90	2.40
6.....		5.60	5.20	4.40	3.10	21.....	5.60	5.40	4.90	3.90	2.30
7.....		5.50	5.20	4.40	3.00	22.....	5.60	5.40	4.80	3.80	2.30
8.....		5.50	5.10	4.40	3.00	23.....	5.60	5.40	4.80	3.80	2.20
9.....		5.50	5.10	4.30	2.90	24.....	5.60	5.40	4.80	3.70	2.20
10.....		5.50	5.10	4.30	2.90	25.....	5.60	5.40	4.80	3.70	2.10
11.....		5.50	5.10	4.30	2.80	26.....	5.60	5.40	4.70	3.60	2.00
12.....		5.50	5.00	4.20	2.80	27.....	5.60	5.40	4.70	3.60	2.00
13.....		5.50	5.00	4.20	2.70	28.....	5.60	5.30	4.70	3.50	2.00
14.....		5.60	5.00	4.20	2.70	29.....	5.60	5.30	4.70	3.50	1.90
15.....	5.70	5.60	5.00	4.20	2.60	30.....	5.60	5.30	4.60	3.40	1.90
	5.70	5.60	5.00	4.20	2.60	31.....	5.60	.....	4.60	3.40	.....

Daily gage height, in feet, of Malheur Lake at Narrows, Oreg., for 1903-1906, 1909—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	1.90	1.40	1.60	1.80	1.60	1.90	5.60	.....	7.00	6.70	6.30	5.70
2.....	1.90	1.40	1.70	1.70	1.60	1.90	5.70	.....	7.00	6.70	6.30	5.70
3.....	1.80	1.40	1.70	1.70	1.60	1.90	5.80	.....	7.00	6.70	6.20	5.70
4.....	1.80	1.40	1.70	1.70	1.60	1.90	5.90	.....	7.00	6.70	6.20	5.70
5.....	1.80	1.40	1.70	1.70	1.60	1.90	5.90	.....	7.00	6.70	6.20	5.70
6.....	1.70	1.40	1.80	1.70	1.60	2.00	6.00	.....	7.00	6.60	6.20	5.60
7.....	1.70	1.40	1.80	1.70	1.70	2.00	6.00	.....	7.00	6.60	6.20	5.60
8.....	1.70	1.40	1.80	1.70	1.70	2.00	6.10	7.20	7.00	6.60	6.20	5.50
9.....	1.70	1.40	1.80	1.70	1.70	2.00	6.10	7.20	7.00	6.60	6.20	5.50
10.....	1.70	1.40	1.80	1.70	1.70	2.00	6.20	7.20	7.00	6.60	6.10	5.50
11.....	1.60	1.40	1.80	1.70	1.70	2.00	6.20	7.20	7.00	6.60	6.10	5.50
12.....	1.60	1.40	1.80	1.70	1.70	2.00	6.30	7.30	6.90	6.60	6.10	5.50
13.....	1.60	1.40	1.90	1.70	1.70	2.10	6.30	7.30	6.90	6.50	6.10	5.50
14.....	1.60	1.40	1.90	1.70	1.80	2.10	6.40	7.30	6.90	6.50	6.00	5.40
15.....	1.50	1.40	1.90	1.70	1.80	2.20	6.40	7.30	6.90	6.50	6.00	5.40
16.....	1.50	1.40	1.90	1.70	1.80	2.20	6.40	7.30	6.80	6.50	6.00	5.40
17.....	1.50	1.40	1.90	1.60	1.80	2.30	6.50	7.20	6.80	6.50	6.00	5.40
18.....	1.40	1.40	1.90	1.60	1.80	2.30	6.50	7.20	6.80	6.50	5.90	5.40
19.....	1.40	1.40	1.90	1.60	1.80	2.30	6.60	7.10	6.80	6.50	5.90	5.40
20.....	1.40	1.40	2.00	1.60	1.80	2.40	6.60	7.10	6.80	6.35	5.90	5.40
21.....	1.40	1.40	2.00	1.60	1.90	2.40	6.70	7.10	6.80	6.45	5.90	5.40
22.....	1.40	1.50	2.00	1.60	1.90	2.40	6.70	7.10	6.80	6.45	5.90	5.40
23.....	1.40	1.50	2.10	1.60	1.90	2.50	6.80	7.10	6.80	6.45	5.90	5.40
24.....	1.40	1.50	2.10	1.60	1.90	2.50	6.90	7.10	6.80	6.45	5.80	5.40
25.....	1.40	1.50	2.10	1.60	1.90	2.50	7.00	7.10	6.80	6.45	5.80	5.40
26.....	1.40	1.50	2.10	1.60	1.90	2.50	7.10	7.10	6.80	6.45	5.80	5.40
27.....	1.40	1.50	2.00	1.60	1.90	2.60	7.10	7.10	6.80	6.45	5.80	5.40
28.....	1.40	1.50	2.00	1.60	1.90	5.10	7.20	7.10	6.80	6.40	5.80	5.40
29.....	1.40	1.60	1.90	1.60	1.90	5.10	7.20	7.10	6.70	6.40	5.80	5.40
30.....	1.40	1.60	1.90	1.60	.....	5.30	7.20	7.10	6.70	6.40	5.80	5.40
31.....	1.40	.....	1.80	1.60	.....	5.40	.....	7.10	.....	6.30	5.70	.....
1904-5.												
1.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.2
2.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	5.0	.....
6.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
8.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	5.65	.....	.....
9.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.0
10.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	4.8	.....
13.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
15.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	5.5	.....	.....
16.....	5.4	5.6	.....	.....	.....	.....	.....	.....	5.7	.....	.....	3.85
17.....	5.4	5.6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18.....	5.3	5.7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19.....	5.3	5.1	.....	.....	.....	.....	.....	.....	.....	.....	4.6	.....
20.....	5.3	5.1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	5.35	.....	.....
23.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.6
24.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	4.4	.....
27.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	5.2	.....	.....
30.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.5
31.....	5.3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

NOTE.—Gage height 1.40 represents surface of dry bed. From about Sept. 1, 1903, water at gage was disconnected from Malheur Lake and subsequent records do not agree with fall of lake surface until some time in 1904.

Daily gage height, in feet, of Malheur Lake at Narrows, Oreg., for 1903-1906, 1909—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....												
2.....			2.7						5.9			
3.....					3.6	3.6						
4.....		3.0										
5.....								5.65				
6.....				3.6								
7.....	3.45						4.75			6.25		
8.....												
9.....			2.65						5.95			
10.....					3.6	3.75						
11.....		2.9										
12.....								5.75				
13.....				3.6								
14.....	3.3						4.8			5.95		
15.....												
16.....			2.65						6.0			
17.....					3.6	3.9						
18.....		2.8										
19.....								5.7				
20.....				3.6								
21.....	3.2						5.0			5.85		
22.....												
23.....									6.1			
24.....					3.6	3.9						
25.....		2.75										
26.....								5.7				
27.....				3.6								
28.....	3.1						5.5					
29.....												
30.....									6.2			
31.....						4.45						
<hr/>												
1909.		Fect.		1909.		Fect.		1909.		Fect.		
Sept. 4.....		1.7		Sept. 6.....		1.6		Sept. 8.....			1.5	
5.....		1.7		7.....		1.6						

SILVIES RIVER NEAR SILVIES, OREG.

Location.—In sec. 14, T. 20 S., R. 31 E., at the site of a proposed dam about 3 miles southwest of Silvies, Oreg., three-fourths mile below Trout Creek, and 1½ miles west of the Burns-Canyon City road.

Records presented.—May 9, 1903, to December 31, 1904; January 1, 1909, to September 30, 1910.

Drainage area.—510 square miles.

Gage.—An inclined staff on left bank, 50 feet below cable.

Channel.—Shifts somewhat at flood stages; bed composed of clean gravel; banks covered with heavy brush.

Discharge measurements.—Made from cable or by wading.

Winter flow.—Affected by ice.

Storage.—A dam constructed at the site of the station will impound all the run-off from the drainage basin above it, and the water so stored could be diverted from this stream to irrigate lands in Harney Valley. The project was at one time under investigation by the United States Reclamation Service, but has since been taken up by the Silver Valley Irrigation Co.

Accuracy.—Conditions fairly favorable for accurate determinations of discharge. The relation between gage height and discharge is materially affected by ice during the winter, but allowance for this factor has been made in the estimates.

Discharge measurements of Silvies River near Silvies, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Fect.</i>	<i>Sec.-ft.</i>	1904.		<i>Fect.</i>	<i>Sec.-ft.</i>
May 9	N. S. Dils.....	4.50	200	June 16	M. L. Lewis.....	3.80	115
June 16	M. D. Williams.....	3.78	78	29	W. C. Sawyer.....	2.94	34
17	F. K. Lowry.....	3.61	74	Sept. 15	do.....	2.22	3.9
17	do.....	3.58	74	Nov. 5	Ivan Landes.....	2.80	14
19	do.....	3.45	53				
26	do.....	3.00	28	1905.			
Sept. 11	J. H. Lewis.....	2.32	2	Mar. 23	M. L. Lewis.....	4.55	166
1904.				Apr. 13	do.....	4.65	156
Mar. 12	M. L. Lewis.....	6.35	375	26	do.....	4.82	193
13	do.....	5.80	336	May 25	do.....	3.90	94
22	do.....	6.86	460	Oct. 24	do.....	2.00	4.1
Apr. 2	do.....	5.75	319	1906.			
8	do.....	8.65	647	July 2	Ivan Landes.....	3.88	89
9	do.....	8.40	653				
10	do.....	8.91	699	1908.			
13	do.....	8.99	965	Aug. 2	Joseph Jacobs.....	1.7	2
13	J. H. and M. L. Lewis .	11.30	1,870	Dec. 24	R. B. Post.....	2.11	13
28	M. L. Lewis.....	10.02	1,170				
May 7	do.....	8.65	723	1909.			
13	do.....	7.58	534	Mar. 11	R. B. Post.....	3.37	58
24	do.....	6.05	371	July 12.	do.....	2.45	6.8
June 2	do.....	5.44	262				
9	do.....	4.98	229	1910.			
				Mar. 26	L. R. Allen.....	8.12	699

^a Ice present.

Daily gage height, in feet, of Silvies River near Silvies, Oreg., for 1903-4, 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....		3.6	2.8	2.4	2.3	16.....	4.0	3.5	2.5	2.4	2.5
2.....		3.6	2.8	2.4	2.3	17.....	4.0	3.3	2.5	2.3	2.5
3.....		3.6	2.7	2.4	2.3	18.....	3.0	3.3	2.5	2.3	2.5
4.....		3.7	2.7	2.4	2.3	19.....	4.0	3.3	2.5	2.3	2.6
5.....		3.7	2.7	2.4	2.3	20.....	4.1	3.3	2.5	2.3	2.5
6.....		3.7	2.7	2.4	2.3	21.....	4.2	3.3	2.5	2.3	2.5
7.....		3.7	2.7	2.4	2.3	22.....	3.6	3.2	2.5	2.3	2.5
8.....		3.6	2.7	2.4	2.3	23.....	3.6	3.2	2.5	2.3	2.5
9.....	4.5	3.5	2.7	2.4	2.3	24.....	3.6	3.1	2.5	2.3	2.5
10.....	4.1	3.4	2.7	2.4	2.3	25.....	3.6	3.1	2.5	2.3	2.5
11.....	4.3	3.4	2.7	2.4	2.3	26.....	3.6	3.0	2.4	2.3	2.5
12.....	4.4	3.5	2.6	2.4	2.3	27.....	3.7	3.0	2.6	2.3	2.5
13.....	4.2	3.6	2.6	2.4	2.3	28.....	3.8	3.0	2.6	2.3	2.5
14.....	4.0	3.5	2.6	2.4	2.4	29.....	3.6	3.0	2.5	2.3	2.5
15.....	4.0	3.5	2.5	2.4	2.5	30.....	3.6	2.9	2.4	2.3	2.5
						31.....	3.4	.....	2.4	2.3	.....

Daily gage height, in feet, of Silvies River near Silvies, Oreg., for 1903-4, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	2.50	2.70	3.20	3.20	3.40	4.45	5.85	9.85	5.25	2.80	2.60	2.25
2.....	2.60	2.70	3.20	3.20	3.40	4.35	5.40	9.85	5.40	2.85	2.60	2.25
3.....	2.70	2.70	3.20	3.20	3.55	3.95	6.85	9.75	5.35	3.00	2.60	2.25
4.....	2.70	2.70	3.10	3.20	3.65	3.95	6.65	9.10	5.25	3.10	2.60	2.20
5.....	2.70	2.70	3.10	3.20	3.65	3.95	6.85	8.95	5.05	3.15	2.50	2.20
6.....	2.70	2.70	3.10	3.20	3.65	5.85	6.85	8.80	5.05	3.20	2.50	2.20
7.....	2.70	2.80	3.10	3.20	3.65	8.40	8.80	8.65	5.00	3.25	2.50	2.20
8.....	2.70	2.80	2.90	3.20	3.65	9.85	8.75	8.50	5.05	3.20	2.45	2.20
9.....	2.70	2.80	2.70	3.20	3.65	8.90	9.20	8.40	5.00	3.20	2.40	2.20
10.....	2.70	2.90	2.70	3.20	3.65	8.10	10.15	8.80	4.65	3.20	2.40	2.20
11.....	2.70	2.90	2.80	3.20	3.65	6.85	10.30	8.05	4.45	3.10	2.40	2.20
12.....	2.70	2.90	2.80	3.20	3.65	6.35	10.60	7.90	4.40	3.10	2.40	2.20
13.....	2.70	3.00	2.80	3.20	3.65	6.35	11.10	7.80	4.30	3.10	2.35	2.20
14.....	2.70	3.10	2.90	3.20	3.65	6.65	12.05	7.35	4.05	3.10	2.35	2.20
15.....	2.70	3.20	2.80	3.20	8.70	6.85	12.10	7.15	4.05	3.10	2.35	2.20
16.....	2.70	3.10	2.90	3.20	8.50	6.85	12.15	7.05	3.80	2.95	2.30	2.20
17.....	2.70	3.00	3.20	3.20	6.45	6.25	11.75	6.85	3.95	3.00	2.30	2.20
18.....	2.70	3.00	3.20	3.20	4.35	6.20	11.50	6.75	3.75	3.00	2.20	2.20
19.....	2.70	2.90	3.20	3.20	3.65	6.85	11.10	6.65	3.50	3.00	2.20	2.25
20.....	2.70	3.00	3.20	3.20	3.65	7.05	11.20	6.45	3.50	3.00	2.20	2.30
21.....	2.70	3.20	3.20	3.20	3.65	6.45	11.00	6.35	3.40	2.90	2.20	2.30
22.....	2.70	3.30	3.20	3.20	9.45	5.65	10.80	6.35	3.40	2.85	2.20	2.30
23.....	2.70	3.40	3.20	3.20	10.80	4.90	10.50	6.25	3.35	2.80	2.30	2.30
24.....	2.70	3.50	3.20	3.40	8.80	4.55	9.95	6.15	3.30	2.80	2.30	2.30
25.....	2.70	3.50	3.20	3.40	7.90	4.85	9.95	6.10	3.30	2.80	2.25	2.30
26.....	2.70	3.50	3.20	3.40	7.45	4.85	9.85	6.05	3.25	2.75	2.25	2.35
27.....	2.70	3.40	3.20	3.40	5.95	4.85	9.75	5.85	3.10	2.70	2.25	2.40
28.....	2.70	3.40	3.20	3.40	5.05	4.85	9.85	5.65	3.50	2.60	2.25	2.45
29.....	2.70	3.30	3.20	3.40	4.85	5.45	9.85	5.45	2.95	2.55	2.25	2.50
30.....	2.70	3.20	3.20	3.40	.....	6.35	9.85	5.30	2.85	2.50	2.25	2.60
31.....	2.70	.....	3.20	3.40	.....	6.45	.....	5.25	.....	2.50	2.25	.....

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1904.			1904.			1904.					
1.....	2.60	2.85	2.95	11.....	2.80	2.80	3.00	21.....	2.85	2.95	3.20
2.....	2.60	2.85	2.95	12.....	2.85	2.80	3.00	22.....	2.85	2.95	3.20
3.....	2.60	2.85	2.95	13.....	2.85	2.80	3.00	23.....	2.85	2.95	3.20
4.....	2.60	2.85	3.50	14.....	2.85	2.80	3.00	24.....	2.85	2.95	3.20
5.....	2.65	2.85	3.50	15.....	2.85	2.80	3.00	25.....	2.85	2.95	3.20
6.....	2.70	2.85	3.50	16.....	2.85	2.85	3.00	26.....	2.85	2.95	3.20
7.....	2.75	2.85	3.00	17.....	2.85	2.90	3.00	27.....	2.85	2.95	3.20
8.....	2.75	2.85	3.00	18.....	2.85	2.90	3.25	28.....	2.85	2.95	3.20
9.....	2.80	2.80	3.00	19.....	2.85	2.90	3.20	29.....	2.85	2.95	3.20
10.....	2.80	2.80	3.00	20.....	2.85	2.95	3.20	30.....	2.85	2.95	3.20
								31.....	2.85	.....	4.10

Daily gage height, in feet, of Silvies River near Silvies, Oreg., for 1903-4, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1						5.0	4.9	4.8	3.9	2.65	2.25	2.05
2						4.8	5.2	4.8	3.8	2.55	2.35	2.15
3					4.3	5.0	5.4	4.4	3.8	2.55	2.25	2.15
4						5.3	5.5	4.5	3.7	2.45	2.15	2.15
5						5.4	5.2	4.6	3.8	2.45	2.15	2.25
6						4.5	5.0	4.6	3.8	2.45	2.25	2.15
7						4.4	4.7	4.6	3.7	2.45	2.25	2.15
8				3.2		4.3	4.5	4.7	3.7	2.35	2.25	2.15
9				3.5		3.8	4.7	4.5	3.6	2.35	2.15	2.25
10					4.3	3.9	4.5	4.4	3.5	2.25	2.15	2.25
11						3.3	5.1	4.3	3.5	2.35	2.15	2.25
12						4.0	5.1	4.3	3.4	2.45	2.25	2.25
13						3.5	5.2	4.3	3.4	2.45	2.25	2.35
14						3.9	5.4	4.3	3.3	2.45	2.25	2.35
15				3.5		4.3	5.4	4.2	3.3	2.45	2.15	2.35
16				5.7	10.0	4.5	5.4	3.9	3.2	2.45	2.05	2.35
17				6.3	9.3	5.0	5.4	3.9	3.2	2.45	2.05	2.25
18				7.3	7.1	4.7	5.4	3.9	3.3	2.35	2.15	2.25
19				8.5	6.5	4.4	5.3	3.9	3.2	2.35	2.15	2.25
20				9.9	5.9	4.3	5.3	3.9	3.3	2.25	2.15	2.25
21				9.95	5.2	4.1	6.0	3.8	3.3	2.25	2.15	2.35
22				8.0	4.7	3.9	4.9	3.7	3.2	2.35	2.05	2.35
23				7.6	4.6	3.9	4.9	3.8	3.1	2.35	2.05	2.25
24				6.4	4.9	4.0	4.8	3.8	3.25	2.25	2.05	2.25
25				5.4	4.4	4.3	4.9	3.7	3.15	2.25	2.05	2.25
26				4.7	4.3	4.5	4.8	3.5	3.15	2.25	2.05	2.25
27				4.5	4.2	4.7	4.9	3.6	3.05	2.35	1.95	2.25
28					4.9	5.1	5.0	3.8	2.95	2.35	2.05	2.35
29				4.3		5.2	5.1	3.9	2.85	2.25	2.05	2.35
30						5.0	4.8	5.1	2.75	2.25	1.95	2.35
31				4.3		4.7		5.0		2.25	1.95	2.35
1909-10.												
1	2.35		3.05	3.05	4.2	10.5	6.3	5.0	2.85	2.15	2.05	
2	2.35		2.85	3.05	4.2	10.5	6.4	5.0	2.65	2.15	2.05	
3	2.35	2.45	2.95	3.05		9.8	6.6	4.8	2.65	2.15	2.05	
4	2.35	2.45	2.95			8.6	6.5	4.7	2.65	2.15	1.95	
5	2.45	2.75	2.95	3.05	4.2	7.0	6.6	4.9	2.65		1.95	
6	2.45	2.75	2.85			7.2	6.5	4.8	2.65		1.95	
7	2.45	2.65	2.85	3.05		6.1	6.6	4.7	2.55	2.15	1.95	
8	2.35	2.45	2.95			5.6	6.5	4.5	2.55	2.15	1.95	
9	2.35	2.55	2.95		4.2	5.0	6.4	4.3	2.45	2.15	1.95	
10	2.35	2.65		3.05		5.5	6.5	4.3	2.45	2.05	1.95	
11	2.45	2.65	2.95		4.2	5.2	6.5	3.9	2.45	2.05	1.85	
12	2.45	2.55	2.95		4.2	5.4	6.7	4.1	2.45	2.05	1.85	
13	2.45	2.55	3.05	3.05		6.2	6.4	3.9	2.45	2.05	1.85	1.85
14	2.45	2.45	2.95			6.7	6.3	3.9	2.25		1.85	1.95
15	2.45	2.55	2.95	3.05	4.2	7.2	6.1	3.9	2.25	2.05	1.85	2.05
16	2.45	2.45	2.95			7.1	5.9	3.5	2.25	2.05	1.85	2.05
17	2.45	2.45	2.95	3.05	4.2	7.2	5.8	3.4	2.25	2.05	1.85	2.05
18	2.45	2.55	2.95			7.4	5.6	3.3	2.25	2.05	1.85	2.15
19	2.45	2.85	2.95	3.05	4.2	7.8	5.5	3.4	2.25	2.05	1.85	2.15
20	2.65	2.65	2.95			10.0	5.5	3.1	2.25	2.05		2.05
21	2.45		2.95	3.05		10.9	5.5	3.2	2.25	2.05	1.85	2.05
22	2.55	3.0	2.95	3.05	4.2	10.1	5.4	3.1	2.25	2.05		2.05
23	2.55	3.2	2.95	3.55		10.0	5.4	3.0	2.25	2.05		2.05
24	2.55	3.2	2.95	4.4	4.2	9.9	5.3	3.0	2.25	2.05		2.05
25	2.55	3.2	2.95	4.5	4.2	8.9	5.3	2.8	2.15			2.05
26	2.45	3.2	3.05	4.6	4.5	8.2	5.1	2.9	2.15	2.15		2.05
27	2.55	3.15	3.05	4.5	4.8	8.0	5.0	3.0	2.15	2.05		2.05
28	2.55	2.95	3.05	4.4	5.2	7.5	4.9	3.1	2.15	2.05		2.15
29	2.45	2.95	3.05	4.3		7.0	4.8	3.1	2.15	2.05		2.15
30	2.45	2.95	3.05	4.3		6.5	4.9	3.0	2.15			2.05
31	2.45		3.05	4.3		6.3		2.9				

River reported frozen Jan. 28 to Feb. 15, and Dec. 2-31, 1909.

River frozen over Jan. 1 to Mar. 1, 1910, when the ice began to break; ice gone Mar. 4; a rise caused by a warm spell about Jan. 22 did not take out the ice; water running over the ice Feb. 26-28.

Stream bed dry Aug. 22 to Sept. 12, 1910.

Daily discharge, in second-feet, of Silvies River near Silvies, Oreg., for 1903-4, 1909-10.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....		68	17	4	2	16.....	108	60	6	4	6
2.....		68	17	4	2	17.....	108	46	6	2	6
3.....		68	13	4	2	18.....	28	46	6	2	6
4.....		76	13	4	2	19.....	108	46	6	2	9
5.....		76	13	4	2	20.....	122	46	6	2	6
6.....		76	13	4	2	21.....	139	46	6	2	6
7.....		76	13	4	2	22.....	68	40	6	2	6
8.....		68	13	4	2	23.....	68	40	6	2	6
9.....	200	60	13	4	2	24.....	68	34	6	2	6
10.....	122	53	13	4	2	25.....	68	34	6	2	6
11.....	158	53	13	4	2	26.....	68	28	4	2	6
12.....	179	60	9	4	2	27.....	76	28	9	2	6
13.....	139	68	9	4	2	28.....	85	28	9	2	6
14.....	108	60	9	4	4	29.....	68	28	6	2	6
15.....	108	60	6	4	6	30.....	68	22	4	2	6
						31.....	53		4	2	

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	6	13	40			162	316	1,090	248	20	12	4
2.....	9	13	40			152	265	1,090	265	22	12	4
3.....	13	13	40			112	435	1,040	259	31	12	4
4.....	13	13	34			112	411	799	248	37	12	3
5.....	13	13	34			112	435	760	225	41	9	3
6.....	13	13	34			316	435	724	225	45	9	3
7.....	13	17	34			642	724	691	220	49	9	3
8.....	13	17	22			1,090	713	661	225	45	8	3
9.....	13	17	13			748	827	642	220	45	7	3
10.....	13	22	13			591	1,250	624	182	45	7	3
11.....	13	22	17			435	1,330	583	162	37	7	3
12.....	13	22	17			375	1,480	564	157	37	7	3
13.....	13	28	17			375	1,750	551	147	37	6	3
14.....	13	34	22			411	2,260	496	122	37	6	3
15.....	13	40	17			435	2,290	471	122	37	6	3
16.....	13	34				435	2,320	459	97	28	5	3
17.....	13	28			387	363	2,100	435	112	31	5	3
18.....	13	28			152	358	1,970	423	92	31	3	3
19.....	13	22			82	435	1,750	411	70	31	3	4
20.....	13	28			82	459	1,810	387	70	31	3	5
21.....	13	40			82	387	1,700	375	62	25	3	5
22.....	13	46			906	293	1,590	375	62	22	3	5
23.....	13	53			1,590	208	1,430	363	58	20	5	5
24.....	13	60			724	172	1,140	352	53	20	5	5
25.....	13	60			564	202	1,140	346	53	20	4	5
26.....	13	60			508	202	1,090	340	49	18	4	6
27.....	13	53			328	202	1,040	316	37	16	4	7
28.....	13	53			225	202	1,090	293	70	12	4	8
29.....	13	46			202	271	1,090	271	28	10	4	9
30.....	13	40				375	1,090	254	22	9	4	12
31.....	13					387		248		9	4	

Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.	Day.	Oct.	Nov.	Dec.
1904.											
1.....	12	22	28	11.....	20	20		21.....		22	28
2.....	12	22	28	12.....	22	20		22.....		22	28
3.....	12	22	28	13.....	22	20		23.....		22	28
4.....	12	22		14.....	22	20		24.....		22	28
5.....	14	22		15.....	22	20		25.....		22	28
6.....	16	22		16.....	22	22		26.....		22	28
7.....	18	22		17.....	22	25		27.....		22	28
8.....	18	22		18.....	22	25		28.....		22	28
9.....	20	20		19.....	22	25		29.....		22	28
10.....	20	20		20.....	22	28		30.....		22	28
								31.....		22	

Daily discharge, in second-feet, of Silvies River near Silvies, Oreg., for 1903-4, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.				6	88	220	208	197	107	14	4.2	2.0
2.				8	88	197	242	197	97	10	6	3.0
3.				10	88	220	265	157	97	10	4.2	3.0
4.				12	88	254	276	167	87	8	3.0	3.0
5.				14	88	265	242	177	97	8	3.0	4.2
6.				20	88	167	220	177	97	8	4.2	3.0
7.				20	88	157	187	177	87	8	4.2	3.0
8.				45	88	147	167	187	87	6	4.2	3.0
9.				70	88	97	187	167	78	6	3.0	4.2
10.				50	88	107	167	157	70	4.2	3.0	4.2
11.				30	88	53	231	147	70	6	3.0	4.2
12.				20	88	117	231	147	62	8	4.2	4.2
13.				30	88	70	242	147	62	8	4.2	6
14.				30	88	107	265	147	53	8	4.2	6
15.				42	88	147	265	137	53	8	3.0	6
16.				179	697	167	265	107	45	8	2.0	6
17.				221	882	220	265	107	45	8	2.0	4.2
18.				294	465	187	265	107	53	6	3.0	4.2
19.				413	393	157	254	107	45	6	3.0	4.2
20.				667	322	147	254	107	53	4.2	3.0	4.2
21.				684	242	127	334	97	53	4.2	3.0	6
22.				359	187	107	208	87	45	6	2.0	6
23.				319	177	107	208	97	37	6	2.0	4.2
24.				228	208	117	197	97	49	4.2	2.0	4.2
25.				159	157	147	208	87	41	4.2	2.0	4.2
26.				112	147	167	197	70	41	4.2	2.0	4.2
27.				100	137	187	208	78	34	6	1.2	4.2
28.				94	208	231	220	97	28	6	2.0	6
29.				88		242	231	107	22	4.2	2.0	6
30.				88		220	197	231	18	4.2	1.2	6
31.				88		187		220		4.2	1.2	
1909-10.												
1.	6	8	34			1,430	369	220	22	3.0	2.0	0.0
2.	6	8	22			1,430	381	220	14	3.0	2.0	.0
3.	6	8	28			1,060	405	197	14	3.0	2.0	.0
4.	6	8	28			708	393	187	14	3.0	1.2	.0
5.	8	18	28			453	405	208	14	3.0	1.2	.0
6.	8	18	22			477	393	197	14	3.0	1.2	.0
7.	8	14	22			346	405	187	10	3.0	1.2	.0
8.	6	8	28			288	393	167	10	3.0	1.2	.0
9.	6	10	28			220	381	147	8	3.0	1.2	.0
10.	6	14	28			276	393	147	8	2.0	1.2	.0
11.	8	14	28			242	393	107	8	2.0	.7	.0
12.	8	10	28			265	417	127	8	2.0	.7	.0
13.	8	10	34			358	381	107	8	2.0	.7	.7
14.	8	8	28			417	369	107	4.2	2.0	.7	1.2
15.	8	10	28			477	346	107	4.2	2.0	.7	2.0
16.	8	8	28			465	322	70	4.2	2.0	.7	2.0
17.	8	8	28			477	311	62	4.2	2.0	.7	2.0
18.	8	10	28			504	288	53	4.2	2.0	.7	3.0
19.	8	22	28			563	276	62	4.2	2.0	.7	3.0
20.	14	14	28			1,160	276	37	4.2	2.0	.7	2.0
21.	8	22	28			1,650	276	45	4.2	2.0	.7	2.0
22.	10	31	28			1,210	265	37	4.2	2.0	.0	2.0
23.	10	45	28			1,160	265	31	4.2	2.0	.0	2.0
24.	10	45	28			1,110	254	31	4.2	2.0	.0	2.0
25.	10	45	28			774	254	20	3.0	2.5	.0	2.0
26.	8	45	34		130	634	231	25	3.0	3.0	.0	2.0
27.	10	41	34		160	598	220	31	3.0	2.0	.0	2.0
28.	10	28	34		200	518	208	37	3.0	2.0	.0	3.0
29.	8	28	34			453	197	37	3.0	2.0	.0	3.0
30.	8	28	34			393	208	31	3.0	2.0	.0	2.0
31.	8		34			369		25		2.0	.0	

NOTE.—Daily discharge determined from three fairly well defined rating curves, applicable 1903, 1904, and 1909-10; discharge Jan. 1-14, 1909, estimated because of ice; discharge Jan. 15 to Feb. 16, 1909, derived from open-channel curve, compared with discharge at Burns station, where there was little ice, and reduced 40 per cent. Mean discharge Jan. 1 to Feb. 25, 1910, estimated at 30 second-feet; discharge determined from open-channel curve Feb. 26-28 reduced, as ice was still in bottom of river. No correction for ice Mar. 1-4; values may be somewhat too high, as ice was present.

Monthly discharge of Silvies River near Silvies, Oreg., for 1903-4, 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
May 9-31.....	200	28	101	4,610	B.
June.....	76	22	52	3,090	B.
July.....	17	4	9	553	B.
August.....	4	2	3	184	C.
September.....	9	2	4	238	C.
The period.....				8,680	
1903-4.					
October.....	13	6	13	799	B.
November.....	60	13	32	1,900	B.
December.....	40		^a 20	1,230	D.
January.....			^a 20	1,230	D.
February.....	1,590		^a 225	12,900	C.
March.....	1,090	112	355	21,800	B.
April.....	2,320	265	1,240	73,900	B.
May.....	1,090	248	530	32,600	B.
June.....	265	22	132	7,860	B.
July.....	49	9	29.0	1,780	C.
August.....	12	3	6.2	381	C.
September.....	12	3	4.4	262	C.
The year.....	2,320		217	157,000	
1904.					
October.....	22	12	19.8	1,220	C.
November.....	28	20	24.0	1,430	C.
December.....			^b 20.0	1,230	D.
1909.					
January.....	684	6	145	8,920	D.
February.....	882	88	198	11,000	D.
March.....	265	53	163	10,000	B.
April.....	334	167	230	13,700	B.
May.....	231	70	138	8,480	B.
June.....	107	18	60.4	3,590	B.
July.....	14	4.2	6.64	408	B.
August.....	6	1.2	2.94	181	C.
September.....	6	2.0	4.43	264	B.
The period.....				56,500	
1909-10.					
October.....	14	6	8.13	500	B.
November.....	45	8	19.5	1,160	B.
December.....	34	22	29.0	1,780	C.
January.....			^b 30.0	1,840	D.
February.....			^b 44.3	2,460	D.
March.....	1,670	220	661	40,600	B.
April.....	417	197	322	19,200	B.
May.....	220	20	98.9	6,080	B.
June.....	22	3.0	7.21	429	B.
July.....	3.0	2.0	2.34	144	C.
August.....	2.0	.0	.71	44	C.
September.....	3.0	.0	1.26	75	C.
The year.....	1,670	.0	102	74,300	

^a Estimated on account of probable ice obstruction.^b Estimated.

SILVIES RIVER NEAR BURNS, OREG.

Location.—In sec. 7, T. 22 S., R. 30 E., 10 feet below a wagon bridge near Parker's house, 10 miles north of Burns.

Records presented.—May 10, 1903, to July 24, 1906; December 14, 1908, to September 30, 1910.

Drainage area.—940 square miles.

Gages.—An inclined and vertical staff.

Channel.—May shift slightly; bed composed of gravel; stream flows through a flat alluvial bottom between banks covered with a dense growth of willows and underbrush. Above a gage height of 13 feet the stream overflows a wide area.

Discharge measurements.—Made from a cable at Lampshire's ranch, 1 mile above the gage.

Winter flow.—Effect of ice small.

Utilization.—The water of Silvies River is largely used for the flood irrigation of hay lands in Harney Valley. As even the flood discharge is so used, any irrigation project that would require the diversion of the water would involve the settlement of accrued water rights.

Accuracy.—Conditions unfavorable for accurate determination of discharge.

Discharge measurements of Silvies River near Burns, Oreg. in 1903-1906, 1908-1910.

Date.	Hydrographer.	Gage height.	Discharge.	Date.	Hydrographer.	Gage height.	Discharge.
1903.		<i>Feet.</i>	<i>Sec. ft.</i>	1905.		<i>Feet.</i>	<i>Sec. ft.</i>
May 12	N. S. Dils.....	6.30	422	Mar. 21	M. L. Lewis.....	7.55	450
June 29	M. D. Williams.....	2.85	54	Apr. 11	do.....	7.70	405
July 17	F. K. Lowry.....	2.43	8	25	do.....	6.65	352
26	W. T. Turner.....	2.60	16	May 17	do.....	4.75	190
Aug. 14	do.....	2.53	11	July 18	Ivan Landes.....	2.54	20
Sept. 17	J. H. Lewis.....	2.62	21	Oct. 3	M. L. Lewis.....	2.40	13.4
1904.				1906.			
Jan. 19	J. H. Lewis.....	2.85	44	May 8	M. L. Lewis.....	7.40	479
Mar. 15	M. L. Lewis.....	9.30	630	23	do.....	5.30	330
25	do.....	6.60	348	June 29	Stevens and Landes....	4.42	250
Apr. 5	do.....	13.30	1,140				
6	do.....	13.60	1,290	1908.			
11	do.....	15.20	2,850	Dec. 11	R. B. Post.....	2.45	18
12	do.....	16.10	3,430				
15	J. H. and M. L. Lewis.	17.10	4,920	1909.			
May 5	M. L. Lewis.....	14.30	1,580	Feb. 2	R. B. Post.....	3.42	95
20	do.....	11.50	887	Mar. 16	do.....	7.21	395
29	do.....	7.50	468	30	do.....	7.88	488
June 8	do.....	5.80	342	June 17	do.....	2.96	79
12	do.....	5.20	280	July 10	do.....	2.49	25
20	do.....	3.75	144	Nov. 10	do.....	2.55	26
23	do.....	3.42	98				
Sept. 8	Sawyer & Lewis.....	2.60	18	1910.			
Nov. 6	Landes & Hoyt.....	2.80	49	Mar. 29	L. R. Allen.....	12.72	943

Daily gage height in feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.						1903.					
1.....		4.1	2.8	2.5	2.3	16.....	5.4	3.0	2.6	2.4	.....
2.....		4.1	2.8	2.5	2.3	17.....	5.4	3.0	2.6	2.4	2.02
3.....		4.1	2.8	2.5	2.3	18.....	5.4	3.0	2.6	2.4	.....
4.....		4.1	2.8	2.5	2.3	19.....	5.4	3.0	2.6	2.4	.....
5.....		4.1	2.7	2.5	2.3	20.....	5.4	3.0	2.6	2.4	.....
6.....		4.0	2.7	2.5	2.3	21.....	5.4	3.0	2.6	2.4	.....
7.....		4.0	2.7	2.5	2.3	22.....	5.4	3.0	2.6	2.4	.....
8.....		3.9	2.7	2.5	2.3	23.....	5.3	3.0	2.6	2.3	.....
9.....		3.8	2.7	2.5	2.2	24.....	4.8	3.0	2.6	2.3	.....
10.....	6.3	3.8	2.7	2.4	2.2	25.....	4.8	2.9	2.5	2.3	.....
11.....	6.3	3.6	2.7	2.4	2.2	26.....	4.9	2.8	2.5	2.3	.....
12.....	6.3	3.6	2.7	2.4	2.2	27.....	4.7	2.8	2.5	2.3	.....
13.....	6.2	3.5	2.7	2.4	.....	28.....	4.5	2.8	2.5	2.3	.....
14.....	5.8	3.0	2.7	2.4	.....	29.....	4.5	2.8	2.5	2.3	.....
15.....	5.4	3.0	2.6	2.4	.....	30.....	4.4	2.8	2.5	.....	.....
						31.....	4.3	.....	2.5	.....	.....

Daily gage height, in feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	2.20	2.50	3.30	2.50	2.75	5.25	9.25	14.90	6.90	3.10	2.85	2.60
2.....	2.20	2.50	3.20	2.50	2.75	5.20	10.30	14.72	6.90	2.90	2.85	2.60
3.....	2.20	2.50	3.00	2.50	2.75	5.10	11.20	14.50	6.90	2.90	2.83	2.60
4.....	2.20	2.50	2.80	2.50	2.75	5.00	12.38	14.40	6.85	2.90	2.82	2.60
5.....	2.20	2.50	2.50	2.50	2.75	5.50	13.10	14.30	6.90	2.90	2.80	2.60
6.....	2.20	2.50	2.50	2.50	2.80	6.25	13.40	14.30	6.40	2.90	2.80	2.60
7.....	2.20	2.50	2.50	2.50	2.80	12.20	13.82	13.90	6.00	3.00	2.80	2.60
8.....	2.20	2.50	2.50	2.50	2.80	16.10	13.85	13.80	5.92	3.00	2.75	2.60
9.....	2.20	2.50	2.50	2.50	2.80	15.60	14.25	13.67	5.90	3.05	2.70	2.60
10.....	2.20	2.50	2.50	2.50	2.80	13.30	14.65	13.52	5.65	3.05	2.70	2.60
11.....	2.20	2.50	2.50	2.50	2.80	11.90	15.45	13.40	5.45	3.10	2.70	2.60
12.....	2.20	2.50	2.50	2.50	2.80	10.00	16.20	13.20	5.40	3.10	2.70	2.60
13.....	2.20	2.50	2.50	2.50	2.80	8.65	16.65	12.90	5.22	3.15	2.70	2.60
14.....	2.20	2.50	2.50	2.90	2.80	8.30	17.00	12.67	4.92	3.15	2.70	2.60
15.....	2.20	2.60	2.50	2.90	2.80	9.30	17.12	12.40	4.45	3.20	2.60	2.60
16.....	2.20	2.60	2.50	2.90	3.30	9.30	16.70	12.10	4.28	3.20	2.60	2.60
17.....	2.20	2.60	2.50	2.90	7.00	8.75	16.40	11.72	4.10	3.15	2.60	2.60
18.....	2.30	2.60	2.50	2.90	7.60	11.20	16.00	11.50	4.00	3.10	2.60	2.60
19.....	2.30	2.70	2.50	2.90	5.75	11.70	15.90	11.18	3.88	3.10	2.60	2.60
20.....	2.30	2.70	2.50	2.85	4.80	13.20	15.90	11.10	3.75	3.00	2.60	2.60
21.....	2.30	2.70	2.50	2.85	4.25	13.00	15.70	10.90	3.62	2.95	2.60	2.60
22.....	2.30	2.80	2.50	2.85	9.70	10.70	15.60	10.40	3.55	2.90	2.60	2.60
23.....	2.30	2.90	2.50	2.85	12.50	10.10	15.40	9.45	3.40	2.90	2.60	2.60
24.....	2.30	3.20	2.50	2.85	12.90	8.20	15.10	9.00	3.35	2.90	2.60	2.60
25.....	2.40	3.40	2.50	2.85	12.80	6.95	14.60	8.50	3.30	2.90	2.60	2.60
26.....	2.40	3.40	2.50	2.80	11.80	6.40	14.20	8.30	3.25	2.90	2.60	2.60
27.....	2.40	3.40	2.50	2.80	9.80	6.00	14.00	8.15	3.10	2.90	2.65	2.70
28.....	2.40	3.50	2.50	2.80	7.20	6.85	14.20	8.00	3.00	2.85	2.65	2.75
29.....	2.40	3.50	2.50	2.80	5.80	8.45	14.90	7.45	3.00	2.85	2.60	2.70
30.....	2.40	3.50	2.50	2.80	.....	10.72	15.00	7.10	3.00	2.85	2.60	2.70
31.....	2.40	.....	2.50	2.75	.....	9.70	.....	6.90	.....	2.85	2.60	.....
1904-5.												
1.....	2.7	2.8	2.8	3.5	2.9	.....	.....	6.8	3.8	2.8	2.4	2.3
2.....	2.7	2.8	2.8	3.9	2.9	.....	.....	6.5	3.8	2.8	2.4	2.3
3.....	2.7	2.8	2.8	3.4	2.9	.....	.....	6.3	3.9	2.8	2.4	2.3
4.....	2.7	2.8	2.8	3.3	2.9	.....	.....	6.25	3.9	2.8	2.4	2.3
5.....	2.7	2.8	2.8	3.1	2.9	.....	.....	6.2	3.9	2.8	2.4	2.3
6.....	2.7	2.8	2.8	2.9	2.9	.....	.....	6.0	3.9	2.8	2.4	2.3
7.....	2.7	2.8	2.8	2.8	.....	.....	.....	5.9	3.9	2.8	2.4	2.3
8.....	2.7	2.8	2.8	2.7	.....	.....	.....	5.2	3.8	2.6	2.4	2.3
9.....	2.75	2.8	2.8	2.7	.....	.....	8.3	5.3	3.8	2.6	2.35	2.3
10.....	2.75	2.8	2.8	2.7	.....	.....	8.0	5.4	3.8	2.6	2.35	2.3
11.....	2.75	2.8	2.8	2.7	.....	.....	7.75	5.6	3.8	2.6	2.35	2.3
12.....	2.8	2.8	2.9	2.7	.....	.....	7.35	5.6	3.5	2.6	2.3	2.3
13.....	2.8	2.8	2.9	2.7	.....	.....	7.15	5.6	3.4	2.6	2.3	2.3
14.....	2.8	2.8	2.95	2.7	.....	.....	7.05	5.5	3.4	2.6	2.3	2.3
15.....	2.8	2.8	2.85	.....	.....	.....	6.65	5.0	3.4	2.6	2.3	2.3
16.....	2.8	2.8	2.8	.....	.....	.....	6.65	4.9	3.3	2.6	2.3	2.3
17.....	2.8	2.8	2.75	.....	.....	.....	6.9	4.8	3.3	2.6	2.3	2.3
18.....	2.8	2.8	2.7	.....	.....	.....	7.0	4.4	3.2	2.6	2.3	2.3
19.....	2.8	2.8	2.7	.....	.....	.....	7.0	4.2	3.2	2.55	2.3	2.3
20.....	2.8	2.8	2.7	.....	.....	.....	7.0	4.2	3.0	2.55	2.3	2.3
21.....	2.8	2.8	2.7	.....	.....	.....	7.2	4.2	3.0	2.5	2.3	2.3
22.....	2.8	2.8	2.7	.....	.....	.....	7.3	4.2	2.9	2.5	2.3	2.3
23.....	2.8	2.8	2.7	.....	.....	.....	7.15	4.2	2.8	2.55	2.3	2.3
24.....	2.8	2.8	2.7	.....	.....	.....	7.0	4.1	2.8	2.55	2.3	2.3
25.....	2.8	2.8	2.7	.....	.....	.....	7.2	4.1	2.8	2.5	2.3	2.3
26.....	2.8	2.8	2.7	.....	.....	.....	7.3	4.0	2.8	2.4	2.3	2.3
27.....	2.75	2.8	2.7	.....	.....	.....	7.5	4.0	2.8	2.4	2.3	2.3
28.....	2.75	2.8	2.7	.....	.....	.....	7.5	3.9	2.8	2.4	2.3	2.3
29.....	2.75	2.8	2.75	2.9	.....	.....	7.3	3.8	2.8	2.4	2.3	2.3
30.....	2.8	2.8	2.8	2.9	.....	.....	6.8	3.8	2.8	2.4	2.3	2.4
31.....	2.8	.....	2.85	2.9	.....	.....	.....	3.8	.....	2.4	2.3	.....

Daily gage height, in feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.	2.4	2.5	2.5	2.4	2.45	2.6	10.6	10.4	9.75	4.3		
2.	2.4	2.5	2.5	2.45	2.45	2.6	9.8	10.0	9.4	4.0		
3.	2.4	2.5	2.5	2.45	2.45	2.6	9.0	9.75	8.6	3.8		
4.	2.4	2.5	2.5	2.45	2.45	2.6	8.8	9.5	8.5	3.6		
5.	2.4	2.5	2.5	2.5	2.45	2.6	9.65	9.08	9.2	3.4		
6.	2.4	2.5	2.5	2.5	2.45	2.6	11.5	8.6	9.3	3.4		
7.	2.4	2.5	2.5	2.5	2.45	2.6	13.25	7.75	9.35	3.2		
8.	2.4	2.5	2.4	2.5	2.5	2.6	14.4	7.2	9.5	3.1		
9.	2.4	2.5	2.5	2.5	2.5	2.6	14.88	7.25	9.5	3.1		
10.	2.4	2.5	2.5	2.5	2.5	2.6	14.9	6.85	9.2	3.0		
11.	2.4	2.5	2.5	2.5	2.55	2.6	14.6	6.38	9.2	3.0		
12.	2.4	2.5	2.5	2.5	2.6	2.6	14.4	6.35	9.0	2.9		
13.	2.4	2.55	2.5	2.5	2.6	2.5	14.0	6.15	8.7	2.8		
14.	2.4	2.55	2.5	2.5	2.6	2.5	13.9	6.15	8.0	2.6		
15.	2.4	2.55	2.5	2.5	2.6	2.5	14.0	6.15	7.8	2.6		
16.	2.4	2.55	2.5	2.6	2.6	2.5	14.15	5.9	7.1	2.6		
17.	2.4	2.55	2.45	2.6	2.6	2.5	14.3	5.5	7.1	2.6		
18.	2.4	2.55	2.45	2.6	2.6	2.5	14.08	5.5	6.8	2.6		
19.	2.4	2.55	2.4	2.6	2.6	2.5	13.92	5.5	6.0	2.6		
20.	2.4	2.5	2.4	2.6	2.6	2.5	13.82	5.5	5.7	2.6		
21.	2.4	2.5	2.4	2.6	2.6	2.5	13.68	5.5	5.0	2.6		
22.	2.4	2.5	2.4	2.6	2.6	2.6	14.0	5.5	4.7	2.6		
23.	2.4	2.5	2.4	2.6	2.6	2.75	13.98	5.25	4.0	2.6		
24.	2.4	2.5	2.4	2.6	2.6	2.8	13.7	5.15	4.0	2.6		
25.	2.45	2.5	2.4	2.5	2.6	3.0	13.4	5.15	4.0			
26.	2.5	2.5	2.4	2.5	2.6	3.8	13.3	5.4	4.0			
27.	2.5	2.5	2.4	2.5	2.6	4.1	13.0	5.6	4.3			
28.	2.5	2.5	2.4	2.45	2.6	4.6	12.9	6.6	4.4			
29.	2.5	2.5	2.4	2.45		4.8	12.7	7.4	4.4			
30.	2.5	2.5	2.4	2.45		6.35	11.9	8.0	4.3			
31.	2.5		2.4	2.45		8.8		8.6				
1908-9.												
1.				2.3	3.6	4.5	8.0	7.9	4.1	2.6	2.3	2.3
2.				2.4	3.6	5.65	8.6	6.7	4.1	2.6	2.3	2.3
3.				2.4	3.4	6.8	9.2	6.5	3.7	2.6	2.3	2.3
4.				2.4	3.4	7.3	9.1	6.3	3.6	2.6	2.3	2.3
5.				2.45	3.4	6.3	9.0	6.3	3.6	2.6	2.3	2.3
6.				2.55	3.4	5.85	8.6	6.25	3.4	2.6	2.3	2.3
7.				2.55	3.2	5.0	7.4	6.2	3.4	2.6	2.3	2.3
8.				2.55	3.15	4.7	7.0	6.2	3.4	2.5	2.3	2.3
9.				2.6	2.9	4.2	6.9	5.9	3.4	2.5	2.3	2.3
10.				3.2	2.9	3.8	7.6	5.7	3.4	2.5	2.3	2.3
11.				3.4	2.9	3.6	8.0	5.65	3.4	2.5	2.3	2.3
12.				3.5	2.9	4.0	8.2	5.65	3.4	2.5	2.3	2.3
13.				2.6	2.95	4.3	8.6	5.65	3.2	2.5	2.3	2.3
14.			2.45	2.6	3.1	5.3	9.3	5.6	3.1	2.5	2.3	2.3
15.			2.45	2.6	3.1	6.3	9.75	5.6	3.0	2.5	2.3	2.3
16.			2.45	2.65	3.2	6.7	10.05	5.0	2.9	2.5	2.3	2.3
17.			2.4	3.1	7.1	7.2	10.2	4.9	3.0	2.5	2.3	2.3
18.			2.4	5.9	9.6	6.6	10.3	4.3	3.1	2.5	2.3	2.3
19.			2.4	6.5	10.5	6.0	9.9	4.1	3.0	2.45	2.3	2.3
20.			2.3	8.7	7.5	5.8	9.3	4.0	3.0	2.45	2.3	2.3
21.				2.3	11.0	6.0	5.2	9.2	4.0	2.9	2.45	2.3
22.				2.3	12.5	5.0	5.0	9.0	4.2	2.9	2.45	2.3
23.				2.25	10.8	4.4	4.9	8.2	4.1	2.9	2.4	2.3
24.				2.25	7.1	4.2	5.0	8.2	4.0	2.9	2.4	2.3
25.				2.25	6.6	4.1	5.2	7.9	3.9	2.9	2.4	2.3
26.				2.25	5.7	4.0	4.9	8.0	3.6	2.9	2.4	2.3
27.				2.25	4.0	4.0	6.6	8.0	3.7	2.6	2.4	2.3
28.				2.25	3.6	3.9	7.8	8.0	3.8	2.6	2.4	2.3
29.				2.25	3.6		8.0	7.9	3.8	2.6	2.4	2.3
30.				2.25	3.6		8.0	7.9	4.45	2.6	2.4	2.3
31.				2.25	3.6		7.9		4.2		2.4	2.3

Daily gage height, in feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	2.3	2.5	2.8	2.65	3.05	6.85	11.2	6.2	2.65	2.5	2.35	2.35
2.....	2.3	2.5	2.8	2.65	3.05	12.25	11.2	6.2	2.65	2.5	2.35	2.35
3.....	2.35	2.55	2.8	2.65	3.05	14.9	11.2	6.2	2.65	2.5	2.35	2.35
4.....	2.4	2.55	2.8	2.65	3.0	15.1	11.2	6.2	2.65	2.5	2.35	2.35
5.....	2.4	2.6	2.7	2.65	3.0	14.55	11.2	6.1	2.65	2.5	2.35	2.35
6.....	2.4	2.6	2.7	2.65	3.0	13.9	10.9	6.1	2.65	2.5	2.35	2.35
7.....	2.4	2.55	2.7	2.7	3.0	13.0	10.9	6.1	2.65	2.5	2.35	2.35
8.....	2.35	2.55	2.7	2.7	3.05	11.7	11.1	5.6	2.65	2.5	2.3	2.35
9.....	2.35	2.6	2.65	2.75	3.05	11.8	11.1	5.1	2.65	2.5	2.3	2.35
10.....	2.5	2.6	2.6	2.75	3.05	11.6	11.2	5.0	2.65	2.45	2.3	2.35
11.....	2.5	2.6	2.6	2.75	3.05	11.6	11.3	4.8	2.65	2.45	2.3	2.45
12.....	2.5	2.65	2.6	2.75	3.0	11.6	11.2	4.7	2.65	2.45	2.3	2.45
13.....	2.5	2.65	2.6	2.75	3.0	12.15	10.9	4.5	2.65	2.45	2.3	2.45
14.....	2.5	2.5	2.6	2.75	3.0	12.6	10.9	4.5	2.65	2.45	2.35	2.55
15.....	2.5	2.5	2.6	2.75	3.0	13.4	10.4	4.2	2.65	2.4	2.35	2.55
16.....	2.5	2.5	2.6	2.85	3.0	13.6	9.9	4.1	2.65	2.4	2.35	2.55
17.....	2.5	2.4	2.6	2.85	3.0	14.2	9.5	3.9	2.6	2.4	2.35	2.55
18.....	2.5	2.5	2.6	2.8	3.0	14.25	9.3	3.7	2.6	2.4	2.35	2.55
19.....	2.5	2.55	2.6	2.9	3.0	14.7	9.0	3.2	2.55	2.4	2.35	2.55
20.....	2.5	2.6	2.5	2.9	3.0	15.7	8.6	3.0	2.55	2.4	2.35	2.55
21.....	2.5	2.6	2.5	2.95	3.0	15.7	8.0	3.05	2.55	2.4	2.35	2.55
22.....	2.5	2.7	2.5	2.95	3.0	15.7	7.9	3.05	2.55	2.4	2.35	2.55
23.....	2.5	2.7	2.5	2.95	3.0	15.3	7.6	3.05	2.55	2.4	2.35	2.55
24.....	2.5	3.1	2.45	2.95	3.0	14.9	7.3	3.0	2.5	2.35	2.35	2.55
25.....	2.5	3.5	2.45	2.95	3.0	14.7	7.0	3.0	2.55	2.35	2.35	2.55
26.....	2.5	3.3	2.4	2.95	3.0	14.5	6.9	3.0	2.55	2.35	2.35	2.55
27.....	2.5	3.1	2.4	2.9	3.1	13.9	6.8	2.95	2.5	2.35	2.35	2.55
28.....	2.5	2.9	2.4	2.9	3.4	13.6	6.6	2.95	2.5	2.35	2.35	2.55
29.....	2.5	2.9	2.4	2.9	.....	12.8	6.5	2.85	2.5	2.35	2.35	2.55
30.....	2.5	2.9	2.4	3.05	.....	11.8	6.3	2.65	2.5	2.35	2.35	2.55
31.....	.....	.....	2.4	3.2	.....	11.6	.....	2.65	.....	2.35	2.35	.....

NOTE.—Winter gage heights probably somewhat affected by ice, though ice was not reported by observer.

Daily discharge, in second-feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910.

Day.	May.	June.	July.	Aug.	Sept.	Day.	May.	June.	July.	Aug.	Sept.
1903.											
1.....		183	40	11	5	16.....	326	62	18	7	.....
2.....		183	40	11	5	17.....	326	62	18	7	20
3.....		183	40	11	5	18.....	326	62	18	7	.....
4.....		183	40	11	5	19.....	326	62	18	7	.....
5.....		183	29	11	5	20.....	326	62	18	7	.....
6.....		172	29	11	5	21.....	326	62	18	7	.....
7.....		172	29	11	5	22.....	326	62	18	7	.....
8.....		161	29	11	5	23.....	315	62	18	5	.....
9.....		150	29	11	3	24.....	260	62	18	5	.....
10.....	425	150	29	7	3	25.....	260	51	11	5	.....
11.....	425	128	29	7	3	26.....	271	40	11	5	.....
12.....	425	128	29	7	3	27.....	249	40	11	5	.....
13.....	414	117	29	7	.....	28.....	227	40	11	5	.....
14.....	370	62	29	7	.....	29.....	227	40	11	5	.....
15.....	326	62	18	7	.....	30.....	216	40	11	5	.....
						31.....	205	.....	11	5	.....

Daily discharge, in second-feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1903-4.												
1.....	3	11	95	6	28	258	629	2,330	409	60	37	15
2.....	3	11	84	6	28	253	730	2,140	409	42	37	15
3.....	3	11	62	6	28	244	829	1,900	409	42	36	15
4.....	3	11	40	6	28	235	986	1,790	405	42	35	15
5.....	3	11	11	6	28	281	1,120	1,690	409	42	33	15
6.....	3	11	11	6	33	350	1,190	1,690	363	42	33	15
7.....	3	11	11	6	33	959	1,340	1,380	327	51	33	15
8.....	3	11	11	6	33	3,630	1,360	1,340	319	51	28	15
9.....	3	11	11	6	33	3,090	1,640	1,281	317	55	24	15
10.....	3	11	11	6	33	1,160	2,060	1,230	295	55	24	15
11.....	3	11	11	6	33	916	2,930	1,190	276	60	24	15
12.....	3	11	11	6	33	700	3,740	1,140	271	60	24	15
13.....	3	11	11	6	33	573	4,220	1,080	255	65	24	15
14.....	3	11	11	42	33	540	4,600	1,030	227	65	24	15
15.....	3	18	11	42	33	634	4,780	989	184	69	15	15
16.....	3	18	11	42	78	634	4,280	944	168	69	15	15
17.....	3	18	11	42	419	582	3,950	892	152	65	15	15
18.....	5	18	11	42	474	829	3,520	865	143	60	15	15
19.....	5	29	11	42	304	890	3,410	827	131	60	15	15
20.....	5	29	11	37	216	1,140	3,410	817	120	51	15	15
21.....	5	29	11	37	166	1,100	3,200	793	108	46	15	15
22.....	5	40	11	37	672	771	3,090	740	101	42	15	15
23.....	5	51	11	37	1,000	710	2,870	648	87	42	15	15
24.....	5	84	11	37	1,080	530	2,550	606	83	42	15	15
25.....	7	106	11	37	1,060	414	2,010	559	78	42	15	15
26.....	7	106	11	33	903	363	1,590	540	74	42	15	15
27.....	7	106	11	33	681	327	1,440	526	60	42	19	24
28.....	7	117	11	33	437	405	1,590	512	51	37	19	28
29.....	7	117	11	33	308	554	2,330	460	51	37	15	24
30.....	7	117	11	33	.....	773	2,440	428	51	37	15	24
31.....	7	.....	11	28	.....	672	.....	409	.....	37	15	.....
1904-5.												
1.....	24	33	33	85	42	.....	.....	367	108	35	13	9
2.....	24	33	33	116	42	.....	.....	340	108	35	13	9
3.....	24	33	33	77	42	.....	.....	322	116	35	13	9
4.....	24	33	33	70	42	.....	.....	317	116	35	13	9
5.....	24	33	33	56	42	.....	.....	313	116	35	13	9
6.....	24	33	33	42	42	.....	.....	295	116	35	13	9
7.....	24	33	33	35	.....	.....	.....	286	116	35	13	9
8.....	24	33	33	29	.....	.....	.....	224	108	23	13	9
9.....	28	33	33	29	.....	.....	514	233	108	23	11	9
10.....	28	33	33	29	.....	.....	484	242	108	23	11	9
11.....	28	33	33	29	.....	.....	459	259	92	23	11	9
12.....	33	33	42	29	.....	.....	419	259	85	23	9	9
13.....	33	33	42	29	.....	.....	399	259	77	23	9	9
14.....	33	33	46	29	.....	.....	389	250	77	23	9	9
15.....	33	33	37	.....	.....	.....	353	207	77	23	9	9
16.....	33	33	33	.....	.....	.....	353	198	70	23	9	9
17.....	33	33	28	.....	.....	.....	376	190	70	23	9	9
18.....	33	33	24	.....	.....	.....	385	156	63	23	9	9
19.....	33	33	24	.....	.....	.....	385	140	63	20	9	9
20.....	33	33	24	.....	.....	.....	385	140	49	20	9	9
21.....	33	33	24	.....	.....	.....	404	140	49	18	9	9
22.....	33	33	24	.....	.....	.....	414	140	42	18	9	9
23.....	33	33	24	.....	.....	.....	399	140	35	20	9	9
24.....	33	33	24	.....	.....	.....	385	132	35	20	9	9
25.....	33	33	24	.....	.....	.....	404	132	35	18	9	9
26.....	33	33	24	.....	.....	.....	414	124	35	13	9	9
27.....	28	33	24	.....	.....	.....	434	124	35	13	9	9
28.....	28	33	24	.....	.....	.....	434	116	35	13	9	9
29.....	28	33	28	42	.....	.....	414	108	35	13	9	9
30.....	33	33	33	42	.....	.....	367	108	35	13	9	13
31.....	33	.....	27	42	.....	.....	.....	108	.....	13	9	.....

Daily discharge, in second-feet, of Silvies River near Burns, Oreg., for 1903-1906,
1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1.....	13	18	18	11	16	29	764	742	675	182	.....	.....
2.....	13	18	18	16	16	29	680	700	641	155	.....	.....
3.....	13	18	18	16	16	29	605	675	569	137	.....	.....
4.....	13	18	18	16	16	29	587	650	560	119	.....	.....
5.....	13	18	18	20	16	29	665	613	623	101	.....	.....
6.....	13	18	18	20	16	29	870	569	632	101	.....	.....
7.....	13	18	18	20	16	29	1,160	493	637	83	.....	.....
8.....	13	18	18	20	20	29	1,660	443	650	74	.....	.....
9.....	13	18	18	20	20	29	2,000	448	650	74	.....	.....
10.....	13	18	18	20	20	29	2,010	412	623	65	.....	.....
11.....	13	18	18	20	25	29	1,800	370	623	65	.....	.....
12.....	13	18	18	20	29	29	1,660	367	605	56	.....	.....
13.....	13	20	18	20	29	20	1,410	349	578	47	.....	.....
14.....	13	20	18	20	29	20	1,360	349	515	29	.....	.....
15.....	13	20	18	20	29	20	1,410	349	497	29	.....	.....
16.....	13	20	18	29	29	20	1,500	326	434	29	.....	.....
17.....	13	20	15	29	29	20	1,590	290	434	29	.....	.....
18.....	13	20	15	29	29	20	1,450	290	407	29	.....	.....
19.....	13	20	13	29	29	20	1,370	290	335	29	.....	.....
20.....	13	18	13	29	29	20	1,330	290	308	29	.....	.....
21.....	13	18	13	29	29	20	1,280	290	245	29	.....	.....
22.....	13	18	13	29	29	29	1,410	290	218	29	.....	.....
23.....	13	18	13	29	29	43	1,400	268	155	29	.....	.....
24.....	13	18	13	29	29	47	1,280	259	155	29	.....	.....
25.....	15	18	13	20	29	65	1,200	259	155	.....	.....	.....
26.....	18	18	13	20	29	137	1,170	281	155	.....	.....	.....
27.....	18	18	13	20	29	164	1,100	299	182	.....	.....	.....
28.....	18	18	13	16	29	209	1,080	389	191	.....	.....	.....
29.....	18	18	13	16	.....	227	1,040	461	191	.....	.....	.....
30.....	18	18	13	16	.....	367	922	515	182	.....	.....	.....
31.....	18	.....	13	16	.....	587	.....	569	.....	.....	.....	.....
1908-9.												
1.....	.....	.....	.....	8	115	189	484	475	158	30	8	8
2.....	.....	.....	.....	14	115	282	538	369	158	30	8	8
3.....	.....	.....	.....	14	98	377	592	352	123	30	8	8
4.....	.....	.....	.....	14	98	421	583	336	115	30	8	8
5.....	.....	.....	.....	18	98	336	574	336	115	30	8	8
6.....	.....	.....	.....	26	98	298	538	332	98	30	8	8
7.....	.....	.....	.....	26	81	229	430	327	98	30	8	8
8.....	.....	.....	.....	26	77	205	394	327	98	22	8	8
9.....	.....	.....	.....	30	56	165	386	302	98	22	8	8
10.....	.....	.....	.....	81	56	132	448	286	98	22	8	8
11.....	.....	.....	.....	98	56	115	484	282	98	22	8	8
12.....	.....	.....	.....	106	56	150	502	282	98	22	8	8
13.....	.....	.....	.....	30	60	173	538	282	81	22	8	8
14.....	.....	.....	.....	18	30	73	253	601	73	22	8	8
15.....	.....	.....	.....	18	30	73	336	645	278	65	22	8
16.....	.....	.....	.....	18	34	81	369	675	229	56	22	8
17.....	.....	.....	.....	14	73	403	412	691	221	65	22	8
18.....	.....	.....	.....	14	302	630	361	702	173	73	22	8
19.....	.....	.....	.....	14	352	724	311	660	1.8	65	18	8
20.....	.....	.....	.....	8	547	439	294	601	150	65	18	8
21.....	.....	.....	.....	8	779	311	245	592	150	56	18	8
22.....	.....	.....	.....	8	980	229	229	574	165	56	18	8
23.....	.....	.....	.....	6	757	181	221	502	158	56	14	8
24.....	.....	.....	.....	6	403	165	229	502	150	56	14	8
25.....	.....	.....	.....	6	361	158	245	475	141	56	14	8
26.....	.....	.....	.....	6	286	150	302	484	115	56	14	8
27.....	.....	.....	.....	6	150	150	361	484	123	30	14	8
28.....	.....	.....	.....	6	115	141	466	484	132	30	14	8
29.....	.....	.....	.....	6	115	.....	484	475	132	30	14	8
30.....	.....	.....	.....	6	115	.....	484	475	185	30	14	8
31.....	.....	.....	.....	6	115	.....	475	165	.....	14	8	.....

Daily discharge, in second-feet, of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	8	22	47	21	.....	382	803	327	21	11	6	6
2.....	8	22	47	21	.....	937	803	327	21	11	6	6
3.....	11	26	47	21	.....	2,170	803	327	21	11	6	6
4.....	14	26	47	21	.....	2,390	803	327	21	11	6	6
5.....	14	30	38	21	.....	1,810	803	319	21	11	6	6
6.....	14	30	38	21	.....	1,340	768	319	21	11	6	6
7.....	14	26	38	25	.....	1,080	768	319	21	11	6	6
8.....	11	26	38	25	.....	863	791	278	21	11	4	6
9.....	11	30	34	30	.....	875	791	237	21	11	4	6
10.....	22	30	30	30	.....	851	803	229	21	9	4	6
11.....	22	30	30	30	.....	851	815	213	21	9	4	9
12.....	22	34	30	30	.....	851	803	205	21	9	4	9
13.....	22	34	30	30	.....	922	768	189	21	9	4	9
14.....	22	22	30	30	.....	1,000	768	189	21	9	6	14
15.....	22	22	30	30	.....	1,170	713	163	21	7	6	14
16.....	22	22	30	40	.....	1,230	660	154	21	7	6	14
17.....	22	14	30	40	.....	1,520	620	136	17	7	6	14
18.....	22	22	30	35	.....	1,560	601	119	17	7	6	14
19.....	22	26	30	45	.....	1,960	574	73	14	7	6	14
20.....	22	30	22	45	.....	3,050	538	54	14	7	6	14
21.....	22	30	22	50	.....	3,050	484	59	14	7	6	14
22.....	22	38	22	50	.....	3,050	475	59	14	7	6	14
23.....	22	38	22	50	.....	2,610	448	59	14	7	6	14
24.....	22	73	18	50	.....	2,170	421	54	14	6	6	14
25.....	22	106	18	50	.....	1,960	394	54	14	6	6	14
26.....	22	89	14	50	.....	1,760	386	54	14	6	6	14
27.....	22	73	14	45	64	1,340	377	50	11	6	6	14
28.....	22	56	14	45	92	1,230	361	50	11	6	6	14
29.....	22	56	14	45	.....	1,040	352	40	11	6	6	14
30.....	22	56	14	.....	.....	875	336	21	11	6	6	14
31.....	22	.....	14	.....	.....	851	.....	21	.....	6	6	.....

NOTE.—Daily discharge determined from rating curves applicable as follows: 1903, poorly defined; 1904, poorly defined except for extreme flood stages, for which it is fairly well defined; 1905, fairly well defined; 1906, poorly defined; Dec. 11, 1908, to Feb. 28, 1910, fairly well defined; Mar. 1 to Sept. 30, 1910, fairly well defined between 15 and 2,800 second-feet. Open-channel rating curves applied throughout winter until 1910; discharges for some periods may be somewhat too large on this account; mean discharge Jan. 30 to Feb. 23, 1910, estimated at 40 second-feet.

Monthly discharge of Silvies River near Burns, Oreg., for 1903-1906, 1908-1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1903.					
May 10-31.....	425	205	314	13,700	C.
June.....	183	40	101	6,010	B.
July.....	40	11	23.0	1,410	B.
August.....	11	5	8.0	492	C.
September.....	.....	.....	a 9.5	565	C.
The period.....	.....	.....	.....	22,200	.....
1903-4.					
October.....	7	3	4.0	246	C.
November.....	117	11	39.0	2,320	C.
December.....	95	11	19.0	1,170	C.
January.....	42	6	24.0	1,480	C.
February.....	1,080	28	285	16,400	C.
March.....	3,630	235	791	48,600	C.
April.....	4,730	629	2,460	146,000	B.
May.....	2,330	409	1,060	65,000	B.
June.....	409	51	211	12,600	C.
July.....	69	37	50.1	3,080	C.
August.....	37	15	21.9	1,350	C.
September.....	28	15	16.3	970	C.
The year.....	4,730	6	415	299,000	.....

a Estimated.

Monthly discharge of Silver River near Burns, Oreg., for 1903-1906, 1908-1910—Contd.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904-5.					
October.....	33	24	29.8	1,830	D.
November.....	33	33	33.0	1,960	D.
December.....	46	24	30.7	1,890	D.
January.....			^a 42.0	2,580	D.
February.....			^a 42.0	2,330	D.
March.....			^a 290	17,800	D.
April.....			^a 460	27,400	C.
May.....	367	108	205	12,600	B.
June.....	116	35	73.8	4,390	B.
July.....	35	13	22.9	1,410	B.
August.....	13	9	10.2	627	C.
September.....	13	9	9.1	542	C.
The year.....			104	75,400	
1905-6.					
October.....	18	13	14.0	861	C.
November.....	20	18	18.5	1,100	C.
December.....	18	13	15.7	965	C.
January.....	29	11	21.4	1,320	D.
February.....	29	16	24.6	1,370	D.
March.....	587	20	77.5	4,770	C.
April.....	2,010	587	1,260	75,000	C.
May.....	742	259	416	25,600	C.
June.....	675	155	428	25,500	C.
July 1-24.....	182	29	65.8	3,130	C.
The period.....				140,000	
1908-9.					
December 14-31.....	18	6	9.7	346	B.
January.....	980	8	195	12,000	C.
February.....	724	56	178	9,890	C.
March.....	484	115	295	18,100	B.
April.....	702	386	537	32,000	B.
May.....	475	115	238	14,600	B.
June.....	158	30	78.5	4,670	B.
July.....	30	14	21.0	1,290	B.
August.....	8	8	8.0	492	B.
September.....	8	8	8.0	476	B.
The period.....				93,900	
1909-10.					
October.....	22	8	19.0	1,170	B.
November.....	106	14	38.0	2,260	B.
December.....	47	14	28.5	1,750	C.
January.....	50	21	35.7	2,200	D.
February.....			^a 42.7	2,370	D.
March.....	3,050	382	1,510	92,800	B.
April.....	815	336	628	37,400	B.
May.....	327	21	162	9,960	B.
June.....	21	11	17.5	1,040	B.
July.....	11	6	8.2	504	C.
August.....	6	4	5.6	344	C.
September.....	14	6	10.8	643	C.
The year.....	3,050	4	209	152,000	

^a Estimated.

DONNER UND BLITZEN RIVER AT MOUTH OF CANYON, NEAR DIAMOND, OREG.

Location.—In sec. 20, T. 32 S., R. 32½ E., at mouth of canyon, 2 miles above "P" ranch buildings, about 25 miles southwest of Diamond, and about 40 miles above Narrows.

Records presented.—May 22 to July 24, 1910.

Drainage area.—200 square miles, approximately.

Gage.—Vertical staff.

Channel.—Sand and gravel; practically permanent.

Discharge measurements.—Made by wading or from a cable.

Winter flow.—Affected by ice.

Diversions.—Station is above all irrigation ditches.

Accuracy.—Conditions are favorable for accurate results.

Cooperation.—Maintained in cooperation with the William Hanley Co.

The following discharge measurement was made by Stevens and Allen: May 22, 1910: Gage height, 3.51 feet; discharge, 334 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of Donner und Blitzen River at mouth of canyon, near Diamond, Oreg., for 1910.

Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.	Date.	Gage height.	Discharge.
	<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>		<i>Feet.</i>	<i>Feet.</i>
May 22.....	3.51	334	June 19.....	3.10	160	July 16.....	2.65	58
29.....	3.42	261	26.....	2.92	111	24.....	2.60	50
June 5.....	3.32	228	July 3.....	2.90	106			
12.....	3.10	160	10.....	2.75	75			

NOTE.—Daily discharge determined from a discharge rating curve well defined by measurements, most of which were made in 1911. They represent the total flow of the river.

Monthly discharge of Donner und Blitzen River at mouth of canyon, near Diamond, Oreg., for 1909-10.

Month.	Mean discharge in second-feet.			Run-off (total in acre-feet).
	Lower station.	Canals.	Total.	
1909.				
January.....			a 80.0	4,920
February.....	63.9	10	73.9	4,100
March.....	105	10	115	7,070
April.....	155	30	185	11,000
May.....	185	60	245	15,100
June.....	298	90	388	23,100
The period.....				65,300
1909-10.				
October.....	47.1	15	62.1	3,820
November.....	92.7	10	103	6,130
December.....	66.8	10	76.8	4,720
January.....	82.1	10	92.1	5,660
February.....	114	10	124	6,890
March.....	402	10	412	25,300
April.....	333	30	363	21,600
May.....	243	60	303	18,600
June.....	82.7	90	173	10,300
July.....	21.3	50	71.3	4,380
August.....			a 41	2,520
September.....			a 40	2,380
The year.....			155	112,000

a Estimated.

NOTE.—Monthly discharge computed by adding the estimated diversion of the canal to the discharge determined from observation at the lower station. Discharge for January, 1909, and August and September, 1910, estimated by comparison with records derived from observations at other stations and by assuming that the low-water discharge in 1911 was fairly representative of that in previous years. Figures originally published for the lower station for July to September, 1909, have been discarded as probably too high, for the channel was obstructed during that period.

The figures for each month are liable to considerable error, but they afford a basis for an approximate estimate of the total yearly discharge.

DONNER UND BLITZEN RIVER NEAR DIAMOND, OREG.

Location.—In sec. 8, T. 32 S., R. 32½ E., at wagon bridge near "P" ranch buildings, about 23 miles southwest of Diamond.

Records available.—January 27, 1909, to July 31, 1910.

Drainage area.—200 square miles.

Gage.—Vertical staff just below bridge.

Channel.—Gravel and sand; practically permanent; banks covered with underbrush and subject to overflow.

Discharge measurements.—Made from bridge or by wading.

Winter flow.—Affected by ice.

Diversions.—Five ditches divert water above the station and about 300 feet below a brush and rock dam diverts water into a sixth ditch. No record has been kept of the actual time of operation of these ditches.

Accuracy.—Owing to changes in the diversion dams and lack of accurate information of diversions, estimates can only be considered fair.

Cooperation.—Maintained in cooperation with the William Hanley Co.

Discharge measurements of Donner und Blitzen River near Diamond, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Feet.</i>	<i>Sec.-ft.</i>	1909.		<i>Feet.</i>	<i>Sec.-ft.</i>
Jan. 27	R. B. Post.....	1.71	58	Nov. 6	R. B. Post.....	1.50	53
June 23	do.....	2.91	212				
24	do.....	3.50	278	1910.			
				May 21	Stevens and Allen.....	3.50	195

Daily gage height, in feet, of Donner und Blitzen River near Diamond, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....					1.55	2.52	2.38	2.60	3.65	2.92	1.55	2.80
2.....					1.50	2.15	2.50	2.75	4.45	2.70	1.52	1.55
3.....					1.50	2.15	2.40	3.00	4.65	2.72	1.50	1.50
4.....					1.50	2.60	2.12	3.25	4.70	2.68	1.50	1.35
5.....					1.60	1.80	2.10	3.22	4.75	2.55	1.50	1.40
6.....					1.40	1.72	2.05	3.00	4.40	2.25	1.45	1.42
7.....					1.50	1.88	1.95	3.10	4.05	2.05	1.40	1.48
8.....					1.45	1.92	1.90	3.00	3.70	2.10	1.40	1.42
9.....					1.40	1.72	2.02	3.10	3.30	2.02	1.40	1.42
10.....					1.55	1.58	2.20	3.02	3.18	2.15	1.40	1.38
11.....					1.45	1.55	2.12	2.82	3.20	2.08	1.40	1.38
12.....					1.45	1.45	2.20	2.68	3.35	2.10	1.40	1.40
13.....					1.50	1.65	2.50	2.65	3.55	2.05	1.40	.....
14.....					1.45	2.18	2.72	2.65	3.58	1.95	1.40	.....
15.....					1.45	2.45	2.80	2.58	3.75	1.95	1.40	.....
16.....					1.70	2.38	2.90	2.45	.....	1.92	1.40	.....
17.....					3.50	3.45	3.02	2.38	.....	1.88	1.40	.....
18.....					2.20	2.08	2.95	2.35	3.42	1.82	1.38	.....
19.....					1.80	1.92	2.92	2.45	3.80	1.72	1.35	.....
20.....					1.60	1.92	2.88	2.60	3.25	1.70	1.35	.....
21.....					1.60	1.90	2.68	2.70	3.20	1.70	1.35	.....
22.....					1.40	2.12	2.65	2.60	3.15	1.70	1.35	.....
23.....					1.50	2.25	2.72	2.48	3.15	1.68	1.35	.....
24.....					1.00	2.80	2.65	2.48	3.25	1.65	1.35	1.40
25.....					1.60	2.10	2.70	2.65	3.45	1.62	1.35	1.40
26.....					1.60	2.10	3.08	2.90	2.80	1.60	1.35	1.35
27.....					1.70	2.25	3.12	3.20	2.82	1.60	1.35	1.35
28.....					2.00	2.12	2.90	3.05	2.85	1.62	1.35	1.35
29.....					2.08	2.70	2.90	2.75	1.00	1.32	1.50
30.....					2.02	2.52	2.75	2.95	1.55	1.30	1.50
31.....					2.05	.....	2.98	.....	1.55	1.35	.....

Daily gage height, in feet, of Donner und Blitzen River near Diamond, Oreg., for 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	1.40	1.60	2.02	1.68	2.80	4.85	4.40	.....	3.90	2.08	.....	.....
2.....	1.40	1.60	1.95	1.72	2.70	5.60	3.85	.....	3.92	2.00	.....	.....
3.....	1.50	1.60	1.68	1.62	2.92	5.30	4.05	.....	3.52	2.05	.....	.....
4.....	1.50	1.60	1.62	1.60	2.70	4.35	4.60	3.60	3.10	1.96	.....	.....
5.....	1.50	1.50	1.60	1.88	2.60	4.22	4.70	3.25	3.00	1.90	.....	.....
6.....	1.50	1.52	1.95	1.68	2.60	4.05	4.55	3.45	3.15	1.92	.....	.....
7.....	1.52	1.54	1.70	1.62	2.78	3.50	4.20	3.35	2.80	1.98	.....	.....
8.....	1.52	1.54	1.90	1.52	3.02	4.15	4.12	3.35	2.30	1.68	.....	.....
9.....	1.50	1.57	1.85	1.48	2.90	3.95	4.10	4.05	2.50	1.75	.....	.....
10.....	1.45	1.52	1.68	1.60	2.68	3.45	4.25	4.20	2.60	1.78	.....	.....
11.....	1.45	1.52	1.68	2.02	2.75	3.55	4.20	4.15	2.70	1.78	.....	.....
12.....	1.45	1.52	2.52	1.52	2.88	3.75	4.50	4.15	2.65	1.82	.....	.....
13.....	1.45	1.53	2.25	1.42	2.90	3.90	4.48	4.25	2.51	1.80	.....	.....
14.....	1.45	1.50	1.68	1.40	2.75	4.30	4.55	3.95	2.42	1.80	.....	.....
15.....	1.45	1.45	1.62	1.35	2.58	4.25	4.30	4.15	2.48	1.78	.....	.....
16.....	1.45	1.40	1.52	1.32	2.15	4.40	4.05	3.90	2.56	1.82	.....	.....
17.....	1.45	1.60	1.55	1.50	1.72	4.35	4.10	3.65	2.48	1.68	.....	.....
18.....	1.45	1.55	1.62	1.42	1.58	4.50	4.22	3.85	2.38	1.70	.....	.....
19.....	1.45	1.52	1.62	1.32	1.42	5.00	4.35	3.95	2.15	1.74	.....	.....
20.....	1.50	2.20	1.60	1.42	1.35	5.65	4.05	3.65	2.20	1.75	.....	.....
21.....	.....	.....	1.52	1.45	1.38	5.40	4.30	3.60	2.12	1.82	.....	.....
22.....	.....	.....	1.45	3.45	1.48	5.00	4.20	3.70	2.05	1.70	.....	.....
23.....	.....	.....	1.42	5.70	1.42	5.05	4.30	3.98	2.05	1.68	.....	.....
24.....	1.45	.....	1.52	3.05	2.10	4.45	4.65	4.05	2.00	1.65	.....	.....
25.....	1.45	.....	1.58	2.65	2.28	4.40	5.15	3.92	2.11	1.62	.....	.....
26.....	1.45	.....	1.65	2.52	2.02	4.30	5.40	3.65	2.05	1.59	.....	.....
27.....	1.45	.....	1.60	2.52	2.15	4.25	5.00	3.75	2.06	1.60	.....	.....
28.....	1.45	2.25	1.58	2.40	3.75	4.15	4.20	3.75	2.22	1.62	.....	.....
29.....	1.50	1.95	1.58	2.38	.....	4.05	.....	3.68	2.10	1.59	.....	.....
30.....	1.50	1.92	1.85	2.62	.....	4.15	.....	3.82	1.98	1.58	.....	.....
31.....	1.50	.....	1.78	2.42	.....	4.15	.....	3.86	.....	.....	.....	.....

NOTE.—Gage heights from about Jan. 24 to Feb. 7, 1910, increased by effect of a driftwood jam on a riffle below. A dam about a mile below the gage, used to divert water into a canal, was raised prior to the measurement on May 21, probably some time in March or April.

Relation of gage height to discharge probably not affected by ice.

Daily discharge, in second-feet, of Donner und Blitzen River near Diamond, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1.....	52	148	133	158	313	.....	.....	.....
2.....	49	108	146	178	442	.....	.....	.....
3.....	49	108	135	214	476	.....	.....	.....
4.....	49	158	104	252	484	.....	.....	.....
5.....	56	73	102	247	492	.....	.....	.....
6.....	43	66	97	214	433	.....	.....	.....
7.....	49	80	87	229	377	.....	.....	.....
8.....	46	84	82	214	321	.....	.....	.....
9.....	43	66	94	229	259	.....	.....	.....
10.....	52	55	113	217	241	.....	.....	.....
11.....	46	52	104	188	244	.....	.....	.....
12.....	46	46	113	168	266	.....	.....	.....
13.....	49	60	146	164	297	.....	.....	.....
14.....	46	111	174	164	302	.....	.....	.....
15.....	46	140	185	156	329	.....	.....	.....
16.....	64	133	199	140	312	.....	.....	.....
17.....	289	282	217	133	294	.....	.....	.....
18.....	113	100	206	130	277	.....	.....	.....
19.....	73	84	202	140	337	.....	.....	.....
20.....	56	84	196	158	252	.....	.....	.....
21.....	56	82	168	171	244	.....	.....	.....
22.....	43	104	164	158	236	.....	.....	.....
23.....	49	118	174	144	236	.....	.....	.....
24.....	56	185	164	144	252	.....	.....	.....
25.....	56	102	171	164	282	.....	.....	.....
26.....	56	102	226	199	185	.....	.....	.....
27.....	64	118	232	244	188	.....	.....	.....
28.....	92	104	199	222	192	.....	.....	.....
29.....	100	171	199	178	.....	.....	.....
30.....	94	148	178	206	.....	.....	.....
31.....	97	.....	211	.....	.....	.....	.....

Daily discharge, in second-feet, of Donner und Blitzen River near Diamond, Oreg., for 1909-10—Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	43	56	94	62	64	510	338	258	257	37	.....	.....
2.....	43	56	87	66	56	637	249	242	260	32	.....	.....
3.....	49	56	62	58	94	586	281	226	198	35	.....	.....
4.....	49	56	58	56	82	425	372	210	141	30	.....	.....
5.....	49	49	56	80	64	404	389	160	129	27	.....	.....
6.....	49	50	87	62	64	377	364	188	148	28	.....	.....
7.....	50	52	64	58	80	289	305	174	106	31	.....	.....
8.....	50	52	82	50	217	393	292	174	53	17	.....	.....
9.....	49	54	78	48	200	361	289	281	73	20	.....	.....
10.....	46	50	62	56	169	282	313	305	84	21	.....	.....
11.....	46	50	62	94	179	297	305	297	95	21	.....	.....
12.....	46	50	148	50	197	329	355	297	91	23	.....	.....
13.....	46	51	118	43	200	353	352	313	74	22	.....	.....
14.....	46	49	62	42	179	417	364	265	64	22	.....	.....
15.....	46	46	58	38	156	409	321	297	71	21	.....	.....
16.....	46	43	50	36	107	433	281	257	80	23	.....	.....
17.....	46	56	52	49	66	425	289	218	71	17	.....	.....
18.....	46	52	58	43	55	450	308	249	60	18	.....	.....
19.....	46	50	58	36	43	535	330	265	42	20	.....	.....
20.....	49	113	56	43	38	646	281	218	45	20	.....	.....
21.....	48	.....	50	46	41	513	321	210	39	23	.....	.....
22.....	48	.....	46	282	48	441	305	225	35	18	.....	.....
23.....	47	.....	44	654	43	450	321	270	35	17	.....	.....
24.....	46	.....	50	97	102	346	380	281	32	16	.....	.....
25.....	46	.....	55	68	121	338	468	260	39	16	.....	.....
26.....	46	.....	60	58	94	321	513	218	35	15	.....	.....
27.....	46	.....	56	58	107	313	441	233	36	15	.....	.....
28.....	46	118	55	49	329	297	305	233	46	16	.....	.....
29.....	49	87	55	48	.....	281	290	222	38	15	.....	.....
30.....	49	84	78	66	.....	297	274	244	31	14	.....	.....
31.....	49	.....	71	50	.....	297	.....	251	.....	14	.....	.....

NOTE.—Daily discharge determined as follows: Feb. 1, 1909, to Mar. 20, 1910, from fairly well defined rating curves; Mar. 21 to July 30, 1910, from poorly defined curve. From July to September, 1909, and perhaps for a longer period, gage heights were affected by a dam below the gage; the stability of this dam and its exact period of operation are uncertain. Mean discharge Nov. 21-27, 1909, estimated at 200 second-feet. Discharge estimates arbitrarily reduced Jan. 24 to Feb. 7, 1910, to allow for effect of wood jam.

Monthly discharge of Donner und Blitzen River near Diamond, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
February.....	289	43	63.9	3,550	B.
March.....	282	46	105	6,460	B.
April.....	232	82	155	9,220	B.
May.....	252	130	185	11,400	B.
June.....	492	178	298	17,700	B.
The period.....				48,300	
1900-10.					
October.....	50	43	47.1	2,900	B.
November.....	.....	43	92.7	5,520	C.
December.....	148	44	66.8	4,110	B.
January.....	654	36	82.1	5,050	C.
February.....	329	38	114	6,330	C.
March.....	646	281	402	24,700	B.
April.....	513	249	333	19,800	C.
May.....	313	160	243	14,900	B.
June.....	260	31	83.6	4,980	B.
July.....	37	14	21.4	1,320	C.
The period.....				89,600	

NOTE.—These discharges show simply the flow past the "P" ranch bridge; for estimated total discharge see page 792.

M'COY CREEK AT KESTERSON'S RANCH, NEAR DIAMOND, OREG.

Location.—In sec. 12, T. 30 S., R. 32 E., 1,000 feet above Kesterson's ranch house, 5 miles southwest of Diamond.

Records presented.—May 23 to September 30, 1910.

Drainage area.—45 square miles.

Gage.—Vertical staff.

Channel.—Sand and gravel; likely to shift.

Discharge measurements.—Made from footbridge or by wading.

Winter flow.—Affected by ice.

Diversions.—Station is above all diversions except one small ditch.

Accuracy.—Conditions are favorable for accurate results.

The following discharge measurement was made by Stevens and Allen:

May 23, 1910: Gage height, 3.64 feet; discharge, 80 second-feet.

Daily gage height, in feet, and discharge, in second-feet, of McCoy Creek at Kesterson's ranch, near Diamond, Oreg., for 1910.

Day.	May.		June.		July.		August.		September.	
	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
1.....			3.4	65	2.0	7	1.65	1.5	1.6	1.0
2.....			3.3	59	1.95	6	1.65	1.5	1.6	1.0
3.....			2.8	33	1.95	6	1.65	1.5	1.6	1.0
4.....			2.8	33	2.0	7	1.65	1.5	1.6	1.0
5.....			2.8	33	1.95	6	1.65	1.5	1.6	1.0
6.....			2.8	33	1.95	6	1.65	1.5	1.6	1.0
7.....			2.8	33	1.95	6	1.65	1.5	1.6	1.0
8.....			2.7	29	1.9	5	1.65	1.5	1.6	1.0
9.....			2.5	21	1.9	5	1.6	1.0	1.6	1.0
10.....			2.5	21	1.8	3.5	1.6	1.0	1.6	1.0
11.....			2.5	21	1.8	3.5	1.6	1.0	1.6	1.0
12.....			2.45	20	1.8	3.5	1.6	1.0	1.6	1.0
13.....			2.4	18	1.8	3.5	1.6	1.0	1.7	2.0
14.....			2.4	18	1.8	3.5	1.6	1.0	1.7	2.0
15.....			2.4	18	1.8	3.5	1.6	1.0	1.7	2.0
16.....			2.4	18	1.8	3.5	1.6	1.0	1.8	3.5
17.....			2.4	18	1.8	3.5	1.6	1.0	1.8	3.5
18.....			2.4	18	1.8	3.5	1.6	1.0	1.75	2.8
19.....			2.4	18	1.8	3.5	1.6	1.0	1.7	2.0
20.....			2.3	15	1.8	3.5	1.6	1.0	1.7	2.0
21.....			2.2	12	1.9	5	1.6	1.0	1.7	2.0
22.....			2.2	12	1.8	3.5	1.6	1.0	1.7	2.0
23.....	3.65	80	2.15	10	1.75	2.8	1.6	1.0	1.7	2.0
24.....		78	2.15	10	1.75	2.8	1.6	1.0	1.7	2.0
25.....		75	2.1	9	1.7	2.0	1.6	1.0	1.7	2.0
26.....		72	2.1	9	1.7	2.0	1.6	1.0	.....	2.0
27.....		70	2.05	8	1.7	2.0	1.6	1.0	.....	2.8
28.....		68	2.05	8	1.7	2.0	1.6	1.0	.....	2.8
29.....	3.45	53	2.0	7	1.7	2.0	1.6	1.0	.....	2.8
30.....	3.6	77	2.0	7	1.7	2.0	1.6	1.0	.....	3.5
31.....	3.6	77	.....	.....	1.65	1.5	1.6	1.0	.....	.....

NOTE.—Daily discharge determined from a fairly well defined rating curve. Discharge interpolated or estimated on days for which no gage heights are published.

Monthly discharge of McCoy Creek at Kesterson's ranch, near Diamond, Oreg., for 1910.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu-racy.
	Maximum.	Minimum.	Mean.		
May 23-31.....	80	53	72.2	1,290	B.
June.....	65	7	21.1	1,260	B.
July.....	7	1.5	3.87	238	B.
August.....	1.5	1.0	1.13	69	B.
September.....	3.5	1.0	1.86	111	B.
The period.....	.....	.....	.....	2,970	.....

M'COY CREEK NEAR DIAMOND, OREG.

Location.—In sec. 35, T. 29 S., R. 32 E., three-fourths of a mile west of Diamond ranch house, about 3 miles southwest of Diamond, 2½ miles below station at Kes-terson's ranch.

Records presented.—February 2 to June 30, 1909.

Drainage area.—Not measured.

Gage.—Vertical staff.

Channel.—Sand and gravel; likely to shift.

Discharge measurements.—Made by wading.

Winter flow.—Affected by ice.

Diversions.—Several ditches divert above the station for irrigation of hay lands in Diamond Swamp.

Accuracy.—Records only fair.

Discharge measurements of McCoy Creek near Diamond, Oreg., in 1909.

Date.	Hydrographer.	Gage height.	Dis-charge.
Mar. 25	R. B. Post.....	Feet.	Sec.-ft.
June 25	.....do.....	1.80	12.1
		3.95	80

Daily gage height, in feet, and daily discharge, in second-feet, of McCoy Creek near Diamond, Oreg., for 1909.

Day.	February.		March.		April.		May.		June.	
	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.	Gage height.	Dis-charge.
1					1.96	15	3.06	45	4.42	101
2	1.85	13			1.82	12	3.42	60	4.34	97
3	1.70	10			1.82	12	3.06	45	4.36	98
4	1.62	9.2			1.93	15	3.84	77	4.04	85
5	1.63	9.3			1.42	7.2	3.71	71	4.91	126
6	1.22	5.2			1.60	9.0	3.71	71	4.62	111
7	1.20	5.0			2.48	27	3.64	69	4.61	110
8	1.60	9.0			2.40	25	4.02	84	4.48	104
9	1.40	7.0			2.51	28	3.71	71	4.41	100
10	1.70	10			2.04	17	3.60	67	4.34	97
11	1.40	7.0			2.08	18	3.84	77	4.14	89
12	1.20	5.0			2.03	17	3.91	79	4.68	114
13	1.04	3.4			2.03	17	3.48	62	3.82	76
14	1.02	3.2			2.06	17	4.02	84	3.64	69
15	1.05	3.5			3.01	43	4.43	102	3.63	68
16	2.05	17	1.95	15	3.42	60	4.01	83	3.65	69
17	1.86	13	2.02	16	3.06	45	4.02	84	3.81	75
18	2.00	16	3.00	43	1.94	15	4.62	111	3.74	73
19	3.05	45	2.41	25	1.48	7.8	4.34	97	3.92	80
20	2.14	19	2.64	32	2.93	41	4.08	86	4.02	84
21	1.94	15	1.82	12	2.97	42	4.43	102	3.87	78
22	1.42	7.2	1.90	14	2.81	37	4.81	120	3.92	80
23	1.95	15	1.41	7.1	2.46	27	4.01	83	3.78	74
24	4.02	84	1.64	9.4	3.41	59	3.92	80	3.62	68
25	3.04	45	1.48	7.8	3.04	45	3.84	77	3.64	69
26	2.42	26	2.00	16	3.02	44	3.72	72	3.42	60
27	2.05	17	3.10	47	3.41	59	4.04	85	3.04	45
28			2.81	37	4.06	85	4.04	85	3.04	45
29			2.04	17	4.01	83	4.00	83	3.02	44
30			1.90	14	3.72	72	4.02	84	3.07	46
31			1.94	15			4.03	84		

NOTE.—The daily discharges are based on a rating curve that is not well defined on account of shifting and obstructed channel conditions. Daily discharge for Feb. 28 to Mar. 15 has been estimated equivalent to 15 second-feet per day.

Monthly discharge of McCoy Creek near Diamond, Oreg., for 1909.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
February 2-28.....	84	3.2	16.1	862	C.
March.....			18.3	1,130	C.
April.....	85	7.2	33.4	1,990	C.
May.....	120	45	80.0	4,920	C.
June.....	126	44	81.2	4,830	C.
The period.....				13,700	

NOTE.—Discharge Feb. 28 to Mar. 15 estimated.

KEIGER CREEK NEAR DIAMOND, OREG.

Location.—In sec. 10, T. 30 S., R. 33 E., about 3 miles southeast of Diamond.

Records presented.—February 1, 1909, to May 31, 1910.

Drainage area.—75 square miles.

Gage.—Vertical staff on right bank.

Channel.—Gravel; practically permanent.

Discharge measurements.—Made by wading.

Diversions.—Station above important diversions.

Accuracy.—Results liable to inaccuracies due to flat grade of stream and obstructions to flow caused by debris catching on willows and underbrush which trail in the water. Low-water flow of stream very steady, as it is derived from springs.

Discharge measurements of Keiger Creek near Diamond, Oreg., in 1909-10.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1909.		<i>Fect.</i>	<i>Sec.-ft.</i>	1910.		<i>Fect.</i>	<i>Sec.-ft.</i>
Mar. 24	R. B. Post.....	2.6	105	May 23	Stevens and Allen.....	1.67	54
June 24	.....do.....	2.3	132				
Nov. 6	.....do.....	.3	13				

Daily gage height, in feet, of Keiger Creek near Diamond, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1					0.9	0.4	1.5	2.3	3.5	2.1	0.3	0.05
2					.8	.4	1.5	2.4	3.7	1.8	.25	.2
3					.56	.4	1.8	2.8	3.8	1.6	.2	.3
4					.3	.4	1.7	2.9	3.8	1.5	.2	.2
5					.26	.4	1.5	2.9	3.75	1.4	.2	.1
6					.8	.5	1.7	2.9	3.75	1.2	.2	.3
7					.56	.56	1.4	2.9	3.2	1.1	.2	.1
8					.56	.55	1.5	2.9	3.2	1.1	.2	.1
9					.26	.2	1.5	2.9	3.15	1.1	.2	.2
10					.7	.1	1.8	3.0	3.0	1.2	.2	.05
11					.6	.3	1.75	2.8	3.0	1.15	.2	.05
12					.3	.3	1.5	2.8	2.7	1.1	.15	.10
13					.3	.5	1.9	2.7	2.8	1.05	.15	.25
14					.2	.6	2.0	2.6	2.9	1.0	.1	.0
15					.2	.5	2.2	2.5	2.9	1.0	.1	.1
16					.56	.5	2.6	2.4	2.9	1.0	.1	.1
17					1.04	.9	2.5	2.45	2.8	1.0	.1	.05
18					.8	.9	2.5	2.4	2.8	.95	.05	.02
19					.75	.8	2.5	2.45	2.8	.9	.05	.0
20					.5	.8	2.4	2.6	2.6	.9	.05	.05
21					.5	.9	2.4	2.5	2.6	.9	.05	.05
22					1.3	.9	2.3	2.45	2.8	.85	.05	.05
23					.7	.8	2.4	2.4	2.6	.8	.05	.05
24					.3	2.5	2.3	2.45	2.5	.5	.05	.05
25					.3	1.42	2.5	2.5	2.4	.5	.05	.05
26					.25	1.3	2.8	2.5	2.4	.55	.05	.05
27					.1	1.4	2.8	2.7	2.1	.55	.05	.05
28					.4	1.2	2.8	2.7	2.0	.5	.05	.05
29						1.2	2.7	2.6	2.0	.5	.05	.1
30						1.2	2.3	3.2	2.0	.5	.03	.1
31						1.3		3.4		.5	.03	

Daily gage height, in feet, of Keiger Creek near Diamond, Oreg., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	0.1	0.2	0.55	0.9	1.0	2.0	1.8	1.9				
2	.1	.2	.5	.8	1.0	1.6	1.8	1.8				
3	.2	.2	.5	.8	1.0	1.4	1.8	1.75				
4	.3	.2	.5	.8	.5	2.0	1.8	1.75				
5	.3	.25	1.5	.9	1.5	1.6	1.75	1.8				
6	.3	.3	1.5	.9	1.0	1.5	1.75	1.9				
7	.3	.2	1.4	.9	.75	1.5	1.75	2.0				
8	.2	.2	1.6	.9	.5	1.5	1.8	2.1				
9	.2	.3	1.7	.9	.6	1.6	1.8	2.3				
10	.2	.3	.8	.9	.6	1.55	1.8	2.4				
11	.2	.3	.55	.9	.6	1.5	1.9	2.1				
12	.1	.3	1.4	.8	.65	1.7	1.9	2.0				
13	.1	.3	.5	.8	.65	1.7	2.0	2.1				
14	.1	.3	.5	.75	.6	1.6	2.0	2.1				
15	.1	.4	.4	.7	.6	1.6	2.0	2.0				
16	.1	.4	.4	.6	.5	1.7	1.9	2.0				
17	.1	.4	1.4	.5	.6	1.8	1.9	1.8				
18	.1	.6	1.0	.5	.7	1.8	1.9	1.8				
19	.05	.7	1.0	.6	.8	2.0	2.1	1.8				
20	.1	.9	1.0	.6	.8	2.1	2.2	1.75				
21	.1	1.4	1.0	.8	.8	2.0	2.3	1.7				
22	.2	1.4	1.0	2.0	.8	1.9	2.4	1.8				
23	.15	1.4	1.0	2.0	1.0	1.9	2.6	1.8				
24	.2	1.4	.8	1.0	1.2	1.8	2.75	1.8				
25	.2	1.4	.9	.9	2.0	1.8	2.8	2.1				
26	.2	1.3	.9	.8	1.9	2.0	3.3	2.1				
27	.2	1.2	.9	.8	2.0	1.9	3.2	2.15				
28	.2	.9	.9	.8	2.0	1.9	2.8	2.3				
29	.2	.6	.95	.8		1.8	2.3	2.5				
30	.2	.6	1.0	1.5		1.8	2.0	2.6				
31	.2		1.0	1.5		1.8		2.7				

NOTE.—Stream entirely frozen over Jan. 26, 1909. Ice too thick for gaging. No ice notes reported by observer, so extent of frozen period is not known.

Daily discharge, in second-feet, of Keiger Creek near Diamond, Oreg., for 1909-10.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909.												
1					26	16	47	96	215	81	14	9.2
2					24	16	47	104	239	62	13	12
3					19	16	62	140	251	52	12	14
4					14	16	57	150	251	47	12	12
5					13	16	47	150	245	43	12	10
6					24	18	57	150	245	35	12	14
7					19	19	43	150	181	32	12	10
8					19	19	47	150	181	32	12	10
9					13	12	47	150	176	32	12	12
10					22	10	62	160	160	35	12	9.2
11					20	14	60	140	160	34	12	9.2
12					14	14	47	140	131	32	11	10
13					14	18	68	131	140	30	11	12
14					12	20	74	122	150	29	10	9.2
15					12	18	88	113	150	29	10	10
16					19	18	122	104	150	29	10	10
17					30	26	113	108	140	29	10	9.2
18					24	26	113	104	140	28	9.2	8.2
19					23	24	113	108	140	26	9.2	8.5
20					18	24	104	122	122	26	9.2	9.2
21					18	26	104	113	122	26	9.2	9.2
22					39	26	96	108	140	25	9.2	9.2
23					22	24	104	104	122	24	9.2	9.2
24					14	113	96	108	113	18	9.2	9.2
25					14	44	113	113	104	18	9.2	9.2
26					13	39	140	113	104	19	9.2	9.2
27					10	43	140	131	81	19	9.2	9.2
28					16	35	140	131	74	18	9.2	9.2
29						35	131	122	74	18	9.2	10
30						35	96	181	74	18	9.0	10
31						39		203		18	9.0	

Daily discharge, in second-feet, of Keiger Creek near Diamond, Oreg., for 1909-10—Contd.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1.....	10	12	19	26	29	74	62	68				
2.....	10	12	18	24	29	52	62	62				
3.....	12	12	18	24	29	43	62	60				
4.....	14	12	18	24	18	74	62	60				
5.....	14	13	47	26	47	52	60	62				
6.....	14	14	47	26	29	47	60	68				
7.....	14	12	43	26	23	47	60	74				
8.....	12	12	52	26	18	47	62	81				
9.....	12	14	57	26	20	52	62	96				
10.....	12	14	24	26	20	50	62	104				
11.....	12	14	19	26	20	47	68	81				
12.....	10	14	43	24	21	57	68	74				
13.....	10	14	18	24	21	57	74	81				
14.....	10	14	18	23	20	52	74	81				
15.....	10	16	16	22	20	52	74	74				
16.....	10	16	16	20	18	57	68	74				
17.....	10	16	43	18	20	62	68	62				
18.....	10	20	29	18	22	62	68	62				
19.....	9.2	22	29	20	24	74	81	62				
20.....	10	26	29	20	24	81	88	60				
21.....	10	43	29	24	24	74	96	57				
22.....	12	43	29	74	24	68	104	62				
23.....	11	43	29	74	29	68	122	62				
24.....	12	43	24	29	35	62	136	62				
25.....	12	43	26	26	74	62	140	81				
26.....	12	39	26	24	68	74	192	81				
27.....	12	35	26	24	74	68	181	84				
28.....	12	26	26	24	74	68	140	96				
29.....	12	20	28	24		62	96	113				
30.....	12	20	29	47		62	74	122				
31.....	12		29	47		62		131				

NOTE.—Daily discharge determined from a rating curve fairly well defined between 10 and 120 second-feet, but very uncertain above. Determination for the winter period somewhat uncertain, as ice affected, to a slight degree, the relation of gage height to discharge.

Monthly discharge of Keiger Creek near Diamond, Oreg., for 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1909.					
February.....	39	10	18.8	1,040	C.
March.....	113	10	26.4	1,620	B.
April.....	140	43	82.2	4,800	B.
May.....	203	96	130	7,990	C.
June.....	251	74	152	9,040	C.
July.....	81	18	31.1	1,910	B.
August.....	14	9	10.5	646	B.
September.....	14	8.2	10.0	595	B.
The period.....				27,700	
1909-10.					
October.....	14	9.2	11.4	701	B.
November.....	43	12	21.8	1,300	B.
December.....	57	16	29.2	1,800	C.
January.....	74	18	28.6	1,760	C.
February.....	74	18	31.2	1,730	B.
March.....	81	43	60.3	3,710	B.
April.....	192	60	87.5	5,210	B.
May.....	131	57	77.7	4,780	B.
The period.....				21,000	

SILVER CREEK NEAR RILEY, OREG.

Location.—In sec. 30, T. 22 S., R. 26 E., 12 miles above Riley, 3 miles below the junction with Nichols Creek.

Records available.—April 14, 1904, to July 14, 1906; February 15 to December 12, 1909; April 6 to September 30, 1910.

Drainage area.—260 square miles.

Gages.—Vertical and inclined staff. At the point where this station has been located Silver Creek is divided into three channels by an earth and rock dam. The original gage, established in 1904, was placed in the third or left channel. When the station was reestablished in 1909 a new gage was installed on the right bank.

Channel.—Clean gravel; not likely to shift.

Discharge measurements.—At the original station measurements were made from the three bridges which cross the channels. After the station was reestablished in 1909 measurements were made from a cable which was installed 50 feet below the new gage, 300 feet above the bridges, and about 100 feet above the dam. The dam is rather unstable, as the brush, earth, and smaller stones are washed away by the first flood and are not replaced until the water subsides in the spring. The 1909 gage heights were affected by these changes.

Winter flow.—Relation of gage height to discharge affected by ice.

Diversions and storage.—The water of Silver Creek is used to irrigate hay lands in the upper Silver Creek Valley. Below this point the valley narrows to a canyon and opens out again near Silver Lake into lower Silver Valley. During the years of low run-off no water from the upper valley reaches the lower. The Silver Creek reservoir site, which was investigated by the United States Reclamation Service and also by the Silver Valley Irrigation Co., is 3 or 4 miles above the gaging section. Water stored at this point could be used to irrigate large areas of agricultural lands on both sides of the stream.

Accuracy.—Results at this station are only approximate.

Discharge measurements of Silver Creek near Riley, Oreg., in 1903-1910.

Date.	Hydrographer.	Gage height.	Dis-charge.	Date.	Hydrographer.	Gage height.	Dis-charge.
1903.		<i>Feet.</i>	<i>Sec.-ft.</i>	1905.		<i>Feet.</i>	<i>Sec.-ft.</i>
Sept. 15	J. H. Lewis.....	2.15	1.0	Apr. 16	M. L. Lewis.....	7.00	107
1904.				23	.....do.....	6.90	105
Apr. 16	J. H. Lewis.....	12.95	1,350	May 23	.....do.....	5.65	36
17	.....do.....	12.75	1,140	July 21	King and Landes.....	4.45	1.6
May 3	.....do.....	9.45	374	Oct. 13	M. L. Lewis.....	4.50	1.0
10	.....do.....	8.30	303	1906.			
21	.....do.....	6.35	112	May 10	M. L. Lewis.....	6.10	64
June 5	.....do.....	5.30	43	June 1	Lewis and Stevens.....	8.10	184
15	M. L. Lewis.....	5.00	33	27	I. Landes.....	5.78	43
25	W. C. Sawyer.....	4.72	14	1909.			
Sept. 10	.....do.....	4.37	.8	Apr. 5	R. B. Post.....	6.20	240
Oct. 11	Landis and Cupper.....	4.45	4.3	June 15	.....do.....	2.70	10.2
29	.....do.....	4.40	3.0	1910.			
1905.				Apr. 6	L. R. Allen.....	3.89	191
Mar. 14	M. L. Lewis.....	8.20	179	May 29	Stevens and Allen.....	1.52	14
15	.....do.....	8.10	165				
Apr. 6	.....do.....	7.70	144				

Daily gage height, in feet, of Silver Creek near Riley, Oreg., for 1904-1906, 1909-10.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1904.							1904.						
1.....		9.90	5.35	4.76			16.....	12.95	7.35	4.85	5.20		4.40
2.....		9.80	5.30	4.75			17.....	12.75	6.90	4.84			4.40
3.....		9.45	5.50	4.73			18.....	12.55	6.45	4.82			4.40
4.....		9.30	5.60	4.70			19.....	12.45	6.50	4.80			
5.....		9.00	6.70	5.20			20.....	12.30	6.35	4.76			4.40
6.....		8.75	6.50	6.20			21.....	11.90	6.30	4.75			4.40
7.....		8.60	6.45	6.75			22.....	11.40	6.25	4.73			4.40
8.....		8.50	5.30	6.74			23.....	10.95	6.20	4.74			4.40
9.....		8.35	5.31	6.73			24.....	10.45	6.15	4.73			4.40
10.....		8.30	5.29	6.72		4.37	25.....	10.05	6.10	4.72			4.40
11.....		8.05	5.32	6.71		4.40	26.....	10.75	6.20	4.71			
12.....		7.80	5.25	6.50			27.....	10.90	6.25	4.70			4.45
13.....		7.60	5.20	6.30		4.40	28.....	11.10	6.30	4.71			4.45
14.....	13.95	7.60	4.80	6.20		4.40	29.....	10.50	6.50	4.72			4.45
15.....	13.45	7.40	4.85	5.34		4.40	30.....	10.10	5.85	4.74			4.40
							31.....		5.50				

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.....	4.4	4.4	4.55	5.0	5.4	5.9	6.9	6.8	5.3	4.75		
2.....	4.4	4.4	4.55		5.4	6.0	7.0	6.65	5.25			
3.....		4.4	4.55	5.0	5.4	6.0		6.6	5.25	4.7		
4.....	4.4	4.4	4.55	5.0	5.4	6.0	7.1	6.55		4.7		
5.....	4.4	4.4		5.0	5.3	6.1	7.2	6.5	5.25	4.7		
6.....	4.4	4.4	4.55	5.0			7.7	6.4	5.25	4.7		
7.....	4.4		4.55	5.0	5.0	6.8	7.8		5.25	4.65		
8.....	4.4	4.45	4.50	5.0	5.0	6.6	7.9	6.45	5.2	4.6		
9.....	4.4	4.5	4.55		5.0	7.0	7.9	6.45	5.2			
10.....		4.5	4.55	5.0	5.0	7.0		6.4	5.2			
11.....	4.4	4.5	4.55	5.0	5.0	7.5	7.5	6.4				
12.....	4.4	4.5		5.0	5.0	7.9	7.2	6.2	5.2			
13.....	4.4	4.5	4.55	5.0			7.1	6.0	5.1			
14.....	4.4		4.55	6.7	5.0	8.2	7.0		5.0			
15.....	4.4	4.55	4.55	9.0	5.0	8.1	6.9	5.8	5.0			
16.....	4.4	4.55	4.55		5.0	8.0	6.8	5.8	5.0			
17.....		4.55	4.55	6.4	5.0	8.8		5.8	5.0			
18.....	4.45	4.55	4.55	6.3	5.0	8.9	6.7	5.8				
19.....	4.45	4.55		6.0	5.0	8.5	6.7	5.7	4.95			
20.....	4.45	4.55	4.55	6.0			7.0	5.7	4.95			
21.....	4.4		4.55	5.8	7.8	8.1	6.9		4.95			
22.....	4.4	4.55	4.6	6.8	7.7	8.0	6.95	5.6	4.9			
23.....	4.4	4.55	5.0		7.0	7.9	6.9	5.55	4.9			
24.....		4.55	5.0	8.6	7.4	7.8		5.5	4.9			
25.....	4.4	4.55	5.0	7.7	6.4	7.5	6.8	5.45				
26.....	4.4	4.55		6.4	6.0	7.5	7.0	5.45	4.9			
27.....	4.4	4.55	5.0	6.4			7.05	5.45	4.85			
28.....	4.4		5.0	6.0	6.2	7.4	6.9		4.85			
29.....	4.4	4.55	5.0	5.8		7.4	6.8	5.3	4.85			
30.....	4.4	4.55	5.0			6.8	6.7	5.3	4.85			
31.....			5.0	5.5		6.7		5.3				

Daily gage height, in feet, of Silver Creek near Riley, Oreg., for 1904-1906, 1909-10—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1905-6.												
1	3.75				5.1	6.0	12.0		8.0			
2	4.2				5.1	6.5	11.0	7.3	7.9	5.6		
3	4.45				5.1	6.5	11.5	7.0		5.5		
4	4.4				5.1	6.5	10.5	7.0	8.9	5.5		
5	4.3						12.0	6.9	8.7	5.4		
6	4.45				5.1	7.0	11.5		8.8	5.4		
7	4.7				5.1	6.0	11.0	6.7	8.7	5.3		
8					5.1	6.5	12.5	6.5	8.5			
9					5.1	5.5		6.4	8.7	5.2		
10					5.1	5.9	12.3	6.3		5.2		
11					5.1	5.9	12.0	6.1	7.8	5.1		
12							11.3	6.0	7.5	5.1		
13					5.1		11.8		7.0	5.0		
14					5.1		11.8	6.0	6.8	5.0		
15					5.1		12.0	5.9	6.5			
16					5.1			6.0	6.0			
17					5.1		12.3	6.0				
18					5.1	5.7	12.0	6.8	6.9			
19							12.7	5.4	6.7			
20					6.7	6.3	11.0		6.5			
21					7.7	6.8	11.0	5.5	6.4			
22					5.1	7.0	10.7	5.7	6.3			
23					5.1	7.3		5.9	6.1			
24					5.1	7.0	10.5	6.0				
25			5.1		5.1	7.0	10.0	6.0	5.5			
26			5.1					9.7	6.1	5.7		
27			5.1		7.0	7.5	9.5	5.8	5.8			
28			5.1		7.3	8.0	8.3	5.7	5.8			
29			5.1			7.0	8.0	7.9	5.7			
30			5.1			9.0		8.1				
31			5.1			8.5		8.1				
1909.												
1						3.0	5.9	4.0	3.1	2.2	1.95	
2						3.15	6.5	3.9	3.1	2.15	1.9	
3						3.25	6.9	3.8	3.0	2.15	1.9	
4						3.35	6.4	3.7	3.0	2.15	1.9	
5						3.0	6.3	3.75	2.9	2.1	1.9	
6						3.4	5.4	3.7	2.53	2.2	1.8	
7						3.3	5.1	3.6	2.63	2.2	1.75	
8						3.25	5.1	3.6	2.73	2.3	1.75	
9						3.2	5.6	3.5	2.63	2.35	1.7	
10						3.3	6.1	3.4	2.73	2.4	1.6	
11						3.25	5.9	3.4	2.73	2.8	1.55	
12						3.2	6.1	3.55	2.73	2.7	1.5	
13						3.2	6.7	3.55	2.7	2.5	1.5	
14						3.4	6.9	3.5	2.7	2.4	1.5	
15					3.7	3.65	6.8	3.3	2.6	2.3	1.45	
16					5.7	4.0	6.5	3.6	2.6	2.1	1.45	
17					5.75	4.4	6.4	3.55	2.7	2.0	1.45	
18					4.0	4.2	5.9	3.4	2.7	2.0	1.45	
19					3.65	3.9	5.6	3.35	2.7	1.95	1.4	
20					3.8	3.85	5.3	3.3	2.7	1.95	1.4	
21					3.45	3.75	5.2	3.2	2.65	1.95	1.4	
22					3.1	3.7	5.0	3.2	2.55	1.9	1.4	
23					3.15	3.75	4.8	3.25	2.5	1.8		
24					3.1	3.9	4.7	3.2	2.45	1.8		
25					3.0	3.9	4.4	3.3	2.45	1.75		
26					3.2	4.95	4.4	3.2	2.45	1.75		
27					3.1	5.2	4.3	3.35	2.4	1.95		
28					3.0	5.8	4.2	3.45	2.4	1.95		
29						5.9	4.2	3.45	2.3	1.95		
30						5.5	4.0	3.3	2.3	1.95		
31						5.5		3.0		1.95		

Daily gage height, in feet, of Silver Creek near Riley, Ore., for 1904-1906, 1909-10—Con.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1909-10.												
1	-----	2.6	2.4	-----	-----	-----	-----	2.0	1.4	1.0	0.2	-----
2	-----	2.6	2.4	-----	-----	-----	-----	2.0	1.4	.9	.1	-----
3	-----	1.5	2.5	2.45	-----	-----	-----	2.1	1.4	.9	-----	-----
4	-----	2.0	2.5	2.5	-----	-----	-----	2.2	1.3	.9	-----	-----
5	-----	2.1	2.2	2.5	-----	-----	-----	2.1	1.3	.9	-----	-----
6	-----	2.1	2.4	2.5	-----	-----	3.9	2.0	1.3	.9	-----	-----
7	-----	2.1	2.4	2.5	-----	-----	-----	1.9	1.3	.9	-----	-----
8	-----	2.1	2.4	2.5	-----	-----	-----	3.6	1.9	1.3	-----	-----
9	-----	2.0	2.3	2.5	-----	-----	-----	3.6	1.8	1.3	.9	-----
10	-----	2.0	2.3	2.5	-----	-----	-----	3.6	2.0	1.3	.8	-----
11	-----	2.1	2.2	2.5	-----	-----	-----	3.5	2.0	1.3	.8	-----
12	-----	2.1	2.2	2.5	-----	-----	-----	3.4	1.9	1.3	.7	-----
13	-----	2.2	2.2	-----	-----	-----	-----	3.3	1.9	1.3	.7	-----
14	-----	2.1	2.3	-----	-----	-----	-----	3.2	1.9	1.3	.7	-----
15	-----	2.1	2.3	-----	-----	-----	-----	3.1	1.8	1.3	.6	-----
16	-----	2.1	2.3	-----	-----	-----	-----	2.9	1.8	1.2	.5	-----
17	-----	2.1	2.3	-----	-----	-----	-----	2.8	1.8	1.1	.6	-----
18	-----	2.1	2.3	-----	-----	-----	-----	2.7	1.8	1.1	.6	-----
19	-----	2.1	2.3	-----	-----	-----	-----	2.6	1.7	1.2	.5	-----
20	-----	2.2	2.45	-----	-----	-----	-----	2.4	1.8	1.2	.5	-----
21	-----	2.2	2.45	-----	-----	-----	-----	2.3	1.8	1.2	.4	-----
22	-----	2.2	2.5	-----	-----	-----	-----	2.2	1.7	1.2	.4	-----
23	-----	2.1	2.85	-----	-----	-----	-----	2.4	1.7	1.2	.4	-----
24	-----	2.25	2.85	-----	-----	-----	-----	2.3	1.5	1.1	.4	-----
25	-----	2.25	2.9	-----	-----	-----	-----	2.2	1.5	1.1	.4	-----
26	-----	2.3	2.85	-----	-----	-----	-----	2.2	1.6	1.1	.4	-----
27	-----	2.2	2.85	-----	-----	-----	-----	2.1	1.6	1.0	.4	-----
28	-----	2.1	2.5	-----	-----	-----	-----	2.0	1.5	1.0	.35	-----
29	-----	2.2	2.35	-----	-----	-----	-----	2.0	1.5	1.0	.3	-----
30	-----	2.2	2.35	-----	-----	-----	-----	2.0	1.5	1.0	.25	-----
31	-----	2.3	-----	-----	-----	-----	-----	1.5	-----	.25	-----	-----

NOTE.—Creek frozen Nov. 14-20 and Dec. 4-11, 1909. Creek dry Aug. 3 until about Oct. 1, 1910. Discharge relation somewhat affected by backwater from a dam below; observer notes changes in dam Apr. 23 and May 20, 1910, which no doubt caused the increase in stage on those days.

Daily discharge, in second-feet, of Silver Creek near Riley, Ore., for 1904-1906, 1909-10.

Day.	Apr.	May.	June.	July.	Aug.	Sept.	Day.	Apr.	May.	June.	July.	Aug.	Sept.
1904.						1904.							
1	-----	466	51	16	-----	-----	16	1,260	188	21	42	-----	2
2	-----	452	48	16	-----	-----	17	1,170	152	21	-----	-----	2
3	-----	404	60	15	-----	-----	18	1,050	117	19	-----	-----	2
4	-----	386	66	14	-----	-----	19	1,040	120	18	-----	-----	2
5	-----	350	136	42	-----	-----	20	986	111	16	-----	-----	2
6	-----	320	120	102	-----	-----	21	862	108	16	-----	-----	2
7	-----	305	117	140	-----	-----	22	734	105	15	-----	-----	2
8	-----	295	48	139	-----	-----	23	641	102	16	-----	-----	2
9	-----	280	48	138	-----	-----	24	552	99	15	-----	-----	2
10	-----	275	48	138	-----	1	25	488	96	15	-----	-----	2
11	-----	250	49	137	-----	2	26	605	102	14	-----	-----	4
12	-----	225	45	120	-----	2	27	632	105	14	-----	-----	4
13	-----	208	42	108	-----	2	28	670	108	14	-----	-----	4
14	-----	1,760	208	18	102	-----	29	560	120	15	-----	-----	4
15	-----	1,520	192	21	50	-----	30	496	81	16	-----	-----	2
							31	-----	60	-----	-----	-----	-----

Daily discharge, in second-feet, of Silver Creek near Riley, Oreg., for 1904-1906, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.
1904-5.												
1.	2	2	8	.....	26	47	99	94	23	7	0	0
2.	2	2	8	.....	26	52	105	86	21	6	0	0
3.	2	2	8	.....	26	52	108	83	21	6	0	0
4.	2	2	8	.....	26	52	111	80	21	6	0	0
5.	2	2	8	.....	23	57	116	78	21	6	0	0
6.	2	2	8	.....	18	75	145	73	21	6	0	0
7.	2	4	8	.....	14	94	151	74	21	4	0	0
8.	2	4	6	.....	14	83	157	75	20	3	0	0
9.	2	6	8	.....	14	105	157	75	20	0	0	0
10.	2	6	8	.....	14	105	145	73	20	0	0	0
11.	2	6	8	.....	14	133	133	73	20	0	0	0
12.	2	6	8	.....	14	157	116	62	20	0	0	0
13.	2	6	8	.....	14	166	111	52	17	0	0	0
14.	2	7	8	.....	14	175	105	47	14	0	0	0
15.	2	8	8	.....	14	169	99	42	14	0	0	0
16.	2	8	8	.....	14	163	94	42	14	0	0	0
17.	4	8	8	.....	14	216	91	42	14	0	0	0
18.	4	8	8	.....	14	223	89	42	13	0	0	0
19.	4	8	8	.....	14	195	89	38	12	0	0	0
20.	4	8	8	.....	73	181	105	38	12	0	0	0
21.	2	8	8	.....	151	169	99	36	12	0	0	0
22.	2	8	.....	.....	145	163	102	34	11	0	0	0
23.	2	8	.....	.....	105	157	99	32	11	0	0	0
24.	2	8	.....	.....	127	151	97	30	11	0	0	0
25.	2	8	.....	.....	73	133	94	28	11	0	0	0
26.	2	8	.....	.....	52	133	105	28	11	0	0	0
27.	2	8	.....	.....	57	130	108	28	10	0	0	0
28.	2	8	.....	.....	62	127	99	26	10	0	0	0
29.	2	8	.....	.....	.....	127	94	23	10	0	0	0
30.	2	8	.....	.....	.....	94	89	23	10	0	0	0
31.	2	.....	.....	.....	.....	89	.....	23	.....	0	0	.....
1905-6.												
1.	.0	.....	.....	.....	.....	26	700	147	178	43	.....	.....
2.	.0	.....	.....	.....	.....	39	495	131	171	41	.....	.....
3.	.8	.....	.....	.....	.....	39	590	113	208	37	.....	.....
4.	.6	.....	.....	.....	.....	39	417	113	245	37	.....	.....
5.	.4	.....	.....	.....	.....	46	700	107	229	33	.....	.....
6.	.8	.....	.....	.....	.....	52	590	101	237	33	.....	.....
7.	6.0	.....	.....	.....	.....	26	495	95	229	29	.....	.....
8.	.....	.....	.....	.....	.....	39	820	83	213	27	.....	.....
9.	.....	.....	.....	.....	.....	15	796	77	229	25	.....	.....
10.	.....	.....	.....	.....	.....	24	772	72	196	25	.....	.....
11.	.....	.....	.....	.....	.....	24	700	62	164	21	.....	.....
12.	.....	.....	.....	.....	.....	26	551	57	143	21	.....	.....
13.	.....	.....	.....	.....	.....	28	654	57	113	17	.....	.....
14.	.....	.....	.....	.....	.....	30	654	57	101	17	.....	.....
15.	.....	.....	.....	.....	.....	32	700	53	83	.....	.....	.....
16.	.....	.....	.....	.....	.....	34	736	57	57	.....	.....	.....
17.	.....	.....	.....	.....	.....	36	772	57	82	.....	.....	.....
18.	.....	.....	.....	.....	.....	38	700	101	107	.....	.....	.....
19.	.....	.....	.....	.....	.....	52	870	33	97	.....	.....	.....
20.	.....	.....	.....	.....	.....	67	495	35	83	.....	.....	.....
21.	.....	.....	.....	.....	.....	94	495	37	77	.....	.....	.....
22.	.....	.....	.....	.....	.....	105	446	45	72	.....	.....	.....
23.	.....	.....	.....	.....	.....	122	432	53	62	.....	.....	.....
24.	.....	.....	.....	.....	.....	105	417	57	50	.....	.....	.....
25.	.....	.....	.....	.....	.....	105	357	57	37	.....	.....	.....
26.	.....	.....	.....	.....	.....	119	324	62	45	.....	.....	.....
27.	.....	.....	.....	.....	52	133	302	54	49	.....	.....	.....
28.	.....	.....	.....	.....	61	163	199	45	49	.....	.....	.....
29.	.....	.....	.....	.....	.....	105	178	171	45	.....	.....	.....
30.	.....	.....	.....	.....	.....	226	162	185	45	.....	.....	.....
31.	.....	.....	.....	.....	.....	195	.....	185	.....	.....	.....	.....

Daily discharge, in second-feet, of Silver Creek near Riley, Oreg., for 1904-1906, 1909-10—
Continued.

Day.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.		
1909.														
1.....						16	201	52	19	5	2.5	.....	
2.....						20	283	48	19	4	2.1	.....	
3.....						24	344	44	16	4	2.1	.....	
4.....						26	268	40	16	4	2.1	.....	
5.....						16	254	42	14	4	2.1	.....	
6.....							28	147	40	8	5	1.4	.....
7.....							25	121	36	9	5	1.1	.....
8.....							24	121	36	11	6	1.1	.....
9.....							22	167	32	9	6	.8	.....
10.....							25	227	28	12	7	.6	.....
11.....							24	201	28	11	12	.2	.....
12.....							22	227	34	11	10	.1	.....
13.....							22	313	34	10	8	.1	.....
14.....							28	344	32	10	7	.1	.....
15.....						40	38	328	25	9	6	.1	.....
16.....							178	52	283	36	9	4	.1	.....
17.....							184	73	268	34	10	3	.1	.....
18.....							52	62	201	28	10	3	.1	.....
19.....							38	48	167	26	10	2.5	.0	.....
20.....							44	46	138	25	10	2.5	.0	.....
21.....							30	42	129	22	10	2.5	.0	.....
22.....							19	40	113	22	8	2.1	.0	.....
23.....							20	42	99	24	8	1.4	.0	.....
24.....							19	48	92	22	8	1.4	.0	.....
25.....							16	48	73	25	8	1.1	.0	.....
26.....							22	110	73	22	8	1.1	.0	.....
27.....							19	129	67	26	7	2.5	.0	.....
28.....							16	189	62	30	7	2.5	.0	.....
29.....								201	62	30	6	2.5	.0	.....
30.....								157	52	25	6	2.5	.0	.....
31.....								157		16		2.5	.0	.....
1909-10														
1.....	0.0	9	7					30	11	4	.2	0.0		
2.....	.0	9	7					30	11	3	.1	.0		
3.....	.1	8	8					35	11	3	.0	.0		
4.....	3	8	8					40	9	3	.0	.0		
5.....	4	5	8					35	9	3	.0	.0		
6.....	4	7	8					195	30	9	3	.0	.0	
7.....	4	7	8					177	26	9	3	.0	.0	
8.....	4	7	8					159	26	9	3	.0	.0	
9.....	3	6	8					159	22	9	3	.0	.0	
10.....	3	6	8					159	30	9	2	.0	.0	
11.....	4	5	8					148	30	9	2	.0	.0	
12.....	4	5	8					137	26	9	2	.0	.0	
13.....	5	5	7					127	26	9	2	.0	.0	
14.....	5	6	7					117	26	9	2	.0	.0	
15.....	4	6	7					107	22	9	2	.0	.0	
16.....	4	6	7					88	22	7	1	.0	.0	
17.....	4	6	7					79	22	5	2	.0	.0	
18.....	4	6	7					71	22	5	2	.0	.0	
19.....	4	6	7					63	19	7	1	.0	.0	
20.....	5	8	7					50	22	7	1	.0	.0	
21.....	5	8	6					45	22	7	.7	.0	.0	
22.....	5	8	6					40	19	7	.7	.0	.0	
23.....	4	13	6					50	19	7	.7	.0	.0	
24.....	6	13	6					45	13	5	.7	.0	.0	
25.....	6	14	6					40	13	5	.7	.0	.0	
26.....	6	13	6					40	16	5	.7	.0	.0	
27.....	5	13	6					35	16	4	.7	.0	.0	
28.....	4	8	6					30	13	4	.6	.0	.0	
29.....	5	6	6					30	13	4	.4	.0	.0	
30.....	5	6	6					30	13	4	.3	.0	.0	
31.....	6		6					13			.3	.0	.0	

NOTE.—Daily discharge determined from rating curves applicable as follows: 1904, fairly well defined; Jan. 1, 1905, to Mar. 31, 1906, well defined; Apr. 1 to July 14, 1906, fairly well defined; 1909, poorly defined; determinations for individual days or weeks in 1909 are liable to fairly large errors, but the mean for the whole period may not be much in error; 1910, fairly well defined. Mean discharge estimated as follows: Feb. 1-14, 1909, 25 second-feet; Apr. 1-5, 1910, 200 second-feet. Discharge estimate derived from open-channel curve Dec. 13-31, 1909, reduced on account of ice.

Monthly discharge of Silver Creek near Riley, Oreg., for 1904-1906, 1909-10.

Month.	Discharge in second-feet.			Run-off (total in acre-feet).	Accu- racy.
	Maximum.	Minimum.	Mean.		
1904.					
January.....			a 10.0	615	D.
February.....			a 20.0	1,150	D.
March.....			a 450	27,700	D.
April.....			a 935	55,600	C.
May.....	466	60	206	12,700	B.
June.....	136	14	38.7	2,300	B.
July.....			a 54.2	3,330	C.
August.....			a 5.8	357	D.
September.....			a 2.6	155	D.
The period.....				104,000	
1904-5.					
October.....	4	2	2.3	141	C.
November.....	8	2	6.2	369	C.
December.....			b 7.0	430	D.
January.....			b 30.0	1,840	D.
February.....	151	14	41.9	2,330	B.
March.....	223	47	128	7,870	B.
April.....	157	89	110	6,540	B.
May.....	94	23	51.0	3,140	B.
June.....	23	10	15.5	922	B.
July.....	7	0	2.2	135	C.
August.....	0	0	.0	0	
September.....	0	0	.0	0	
The year.....	223	0	32.8	23,700	
1906.					
February.....			b 12.2	680	D.
March.....	226	15	70.5	4,330	C.
April.....	870	162	551	32,800	B.
May.....	185	33	82.5	5,070	B.
June.....	245	37	123	7,320	B.
July 1-14.....	43	17	29.0	805	C.
The period.....				51,000	
1909.					
February.....	184		a 37.4	2,080	C.
March.....	201	16	58.2	3,580	C.
April.....	344	52	181	10,800	C.
May.....	52	16	31.1	1,910	C.
June.....	19	6	10.3	613	C.
July.....	12	1.1	4.20	258	C.
August.....	2.5	.0	.54	33	C.
September.....	.0	.0	.00	0	
The period.....				19,300	
1909-10.					
October.....	6	.0	4.04	248	C.
November.....	14	5	7.77	462	C.
December.....	8	6	6.97	429	C.
April.....		30	a 107	6,370	C.
May.....	40	13	22.9	1,410	C.
June.....	11	4	7.47	444	C.
July.....	4	.3	1.73	106	C.
August.....	.2	.0	.01	0	
September.....	.0	.0	.00	0	

a Estimated.

b Discharge estimated on account of probable ice obstruction.

NOTE.—Creek dry August and September and part of July, 1905.

MISCELLANEOUS MEASUREMENTS.

The results of discharge measurements of streams in Oregon, made at points other than regular gaging stations, are presented in the following list, the general order of arrangement being that followed in the body of this report.

Miscellaneous stream measurements in Oregon.

Owyhee River basin. •

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
				<i>Sec.-ft.</i>
July 13, 1904	Wilson ditch <i>a</i>		Nyssa	20.2
Aug. 10, 1904	do		do	3.3
Sept. 1, 1904	do		do	4.0
May 11, 1905	do		do	9.2
May 19, 1905	do		2 miles above Ontario	9.0
June 7, 1905	do		do	7.3
July 3, 1905	do		do	8.5
Aug. 1, 1905	do		do	.9
Aug. 16, 1905	do		1 mile above Ontario	1.3
Sept. 13, 1905	do		do	2.3
Oct. 14, 1905	do		do	5.2
Sept. 12, 1905	Owyhee River	Snake River	Wilson's ranch near Owyhee	4.8
Oct. 13, 1905	do	do	do	13.7

Malheur River basin.

July 12, 1908	Middle Fork of Malheur River.	Snake River	Warm Spring ranch	41
July 11, 1908	do	do	Drewsey	40
Aug. 6, 1907	Spring	South Fork of Malheur River.	Cris. Dennaen's, sec. 2, T. 25 S., R. 36 E.	4.0
July 11, 1908	North Fork of Malheur River.	Malheur River	Beulah	50
Apr. 9, 1904	Bully Creek	do	Bridge at Westfall	324
Apr. 11, 1904	do	do	do	643
June 14, 1905	Linebarger ditch <i>b</i>		10 miles above Vale	2.7
July 10, 1908	Mill ditch <i>b</i>		Near intake, Vale	20
June 7, 1905	Brosnan ditch <i>b</i>		3 miles west of Ontario	.4
Oct. 4, 1905	do		do	3.9

Canals in Willow Creek basin.

Aug. 3, 1904	Logan ditch <i>a</i>			1.2
Apr. 28, 1905	do			5.4
June 2, 1905	do			.22
July 11, 1905	do			.33
Sept. 28, 1905	do			.67
Apr. 27, 1905	Norwood ditch <i>d</i>			2.5
June 2, 1905	do			.37
June 23, 1905	do			.3
Apr. 29, 1905	Peterson & Teter ditch.			3.1
July 7, 1904	Upper Scott ditch <i>c</i>			1.9
Do	Lower Scott ditch <i>c</i>			5.2
Apr. 28, 1905	Scott ditch <i>c</i>		Above division between upper and lower ditches.	3.8
June 2, 1905	do		do	1.3
June 23, 1905	do		do	1.6
Aug. 3, 1904	Turner ditch <i>c</i>		Johnson's ranch	2.2
Sept. 3, 1904	do		do	1.8
Apr. 28, 1905	do		do	1.4
June 3, 1905	do		do	3.1
June 23, 1905	do		do	1.2
July 11, 1905	do		do	.27
Aug. 25, 1905	do		do	.6
Apr. 28, 1905	Logan ditch <i>d</i>			.5

a Diverts water from Snake River above Nyssa.

b Diverts from Malheur River.

c Diverts from Willow Creek.

d Diverts from Becker Creek.

Miscellaneous stream measurements in Oregon—Continued.

Canals in Willow Creek basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Discharge.
				<i>Sec.-ft.</i>
July 8, 1904	Cole's ditch ^a		Three-fourths mile above ranch	1.9
Aug. 3, 1904	do		One-half mile above ranch	1.4
Sept. 3, 1904	do			1.5
Apr. 27, 1905	do			7.0
June 2, 1905	do			3.1
July 10, 1905	do			.7
Sept. 28, 1905	do			.5
Nov. 8, 1905	do			.14
July 8, 1904	Company ditch ^a			-8.5
Aug. 3, 1904	do			.3
Sept. 3, 1904	do			1.2
Apr. 28, 1905	do			15.4
June 3, 1905	do			12.6
June 23, 1905	do			8.1
July 11, 1905	do			.3
Sept. 28, 1905	do			4.5
Sept. 3, 1904	Patrick Faulkner ditch ^a			.4
Apr. 29, 1905	do			1.5
June 1, 1905	do			1.4
July 11, 1905	do			.76
Aug. 10, 1905	do			.09
Apr. 29, 1905	Larry Faulkner ditch ^a			3.3
Aug. 9, 1905	Gray ditch ^a			4.1
Apr. 29, 1905	Harris ditch ^a			.5

Burnt River basin.

July 4, 1907	Burnt River	Snake River	Durkee	23
Mar. 3, 1905	do	do	Huntington	196
Mar. 24, 1905	do	do	do	393
Sept. 14, 1905	do	do	do	Dry.
Nov. 22, 1905	do	do	do	33.9
July 3, 1907	South Fork of Dixie Creek.	Burnt River	Rye Valley, 4 miles above mouth.	1.5

Powder River basin.

Aug. 19, 1907	Powder River	Snake River	Sumpter	11
Aug. 21, 1907	do	do	Haines	16
July 27, 1907	do	do	Above North Fork, near North Powder.	110
Sept. 7, 1908	do	do	Sec. 26, T. 6 S., R. 40 E.	10
Aug. 16, 1907	do	do	Erwin	3.6
July 7, 1907	do	do	Sec. 32, T. 8 S., R. 43 E.	295
Aug. 24, 1909	do	do	Below Eagle Creek	60
Aug. 20, 1907	Goodrich Creek	Powder River	Wingville	2.6
Do	Willow Creek	do	Sec. 5, T. 8 S., R. 39 E.	3.4
Feb. 11, 1907	Dutch Flat Creek	do	Haines	4.7
Aug. 20, 1907	Rock Creek	do	One-half mile above Rock-creek.	28
Do	Muddy Creek	do	2 miles west of Rock-creek	2
July 27, 1907	North Fork of Powder River.	do	North Powder	25
Oct. —, 1905	Eagle Creek	do	Above Little Eagle Creek	95
Aug. 25, 1905	do	do	do	159
Aug. 24, 1905	do	do	do	162
July 9, 1907	do	do	Newbridge	1,040
Do	Fuller ditch ^b	do	Opposite Newbridge	4.8
Do	Holcomb ditch ^b	do	do	.9
Do	Hostine ditch ^b	do	do	6.7
Do	Moody ditch ^b	do	do	14
Do	Newton Young ditch ^b	do	do	32
Do	Waterbury ditch ^b	do	do	14
Aug. 8, 1907	Basha ditch	do	Miles	26
Aug. 17, 1907	do	do	do	14
Aug. 8, 1907	Lower Powder Ditch and Dam Co.'s ditch ^b	do	do	7.6
Do	North Side ditch ^b	do	do	9.9

^a Diverts from Willow Creek.^b Diverts from Powder River.

Miscellaneous stream measurements in Oregon—Continued.

Pine Creek basin.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Oct. —, 1905	Pine Creek.....	Snake River.....	Cornucopia.....	<i>Sec.-ft.</i> 135
Feb. 5, 1910	North Fork of Pine Creek.....	Pine Creek.....	Near Pine.....	60

Grande Ronde River basin.

Aug. 27, 1907	Grande Ronde River.....	Snake River.....	La Grande.....	10
May 31, 1908	Firepoint Creek.....	Grande Ronde River..	Near mouth, Hilgard.....	47
Sept. 19, 1905	Wallowa River.....	do.....	Wallowa Falls above Wallowa Lake.....	33
Feb. 6, 1907	do.....	do.....	Junction of Forks.....	48
May 5, 1908	do.....	do.....	do.....	264
June 2, 1908	do.....	do.....	Lovely, above Minam River.....	626
Jan. 8, 1905	Bear Creek.....	Wallowa River.....	Wallowa.....	75.2
Mar. 31, 1905	do.....	do.....	do.....	54.5
May 19, 1905	do.....	do.....	do.....	305
Sept. 18, 1905	do.....	do.....	do.....	.5
Nov. 29, 1905	do.....	do.....	do.....	12.1
Sept. 20, 1905	Minam River.....	do.....	Mouth, Minam.....	62
June 3, 1908	do.....	do.....	Wallowa.....	744
Sept. 14, 1910	do.....	do.....	do.....	67

Canals in Wallowa River basin.

July 12, 1905	Silver Lake ditch ^a....	.....	One-fourth mile below intake, near Joseph.....	74.1
Sept. 19, 1905	do.....	.....	do.....	16.1
Nov. 27, 1905	do.....	.....	do.....	2.9
June 2, 1908	do.....	.....	do.....	47
Sept. 13, 1910	do.....	.....	do.....	11.5
July 11, 1905	Farmers & Citizens ditch ^a.....	.....	Flume near intake, Joseph.....	68.5
Nov. 27, 1905	do.....	.....	do.....	11.2
May 23, 1906	do.....	.....	do.....	49.0
Sept. 13, 1910	do.....	.....	do.....	16
July 12, 1905	Granger ditch ^a.....	.....	Wagon bridge, Joseph.....	76.9
Nov. 27, 1905	do.....	.....	do.....	9.1
May 23, 1906	do.....	.....	do.....	87
June 2, 1908	do.....	.....	do.....	71
Do.....	Mitchell canal ^a.....	.....	Flume, Joseph.....	33
July 12, 1905	Big Bend ditch ^a.....	.....	Wagon bridge, Joseph.....	72.7
Nov. 27, 1905	do.....	.....	do.....	8.2
May 23, 1906	do.....	.....	do.....	56
June 2, 1908	do.....	.....	do.....	32
Sept. 13, 1910	Flour mill canal ^a.....	.....	Joseph.....	21.4
Sept. 14, 1910	Dobbins canal ^a.....	.....	do.....	21.4

Walla Walla River basin.

May 30, 1906	Walla Walla River....	Columbia River.....	Milton.....	8,130
Nov. 14, 1906	do.....	do.....	do.....	4,550
Mar. 23, 1906	North Fork of Walla Walla River.....	Walla Walla River....	Junction with South Fork.....	28
Mar. 24, 1906	do.....	do.....	do.....	21
Aug. 29, 1906	do.....	do.....	do.....	7
Mar. 23, 1906	Dry Creek.....	do.....	500 feet below crossing of Finis Irrigation Co.'s flume.....	13
Do.....	Couse Creek.....	Dry Creek.....	Near Milton.....	10
Aug. 10, 1906	do.....	do.....	do.....	Dry.

Umatilla River basin.

Aug. 24, 1907	Umatilla River.....	Columbia River.....	Gibbon.....	55
Aug. 23, 1907	do.....	do.....	1 mile below Pendleton.....	26
Aug. 27, 1907	do.....	do.....	1 mile below Echo.....	16

^a Diverts from Wallowa River.

Miscellaneous stream measurements in Oregon—Continued.

Umatilla River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 9, 1905	Umatilla River	Columbia River	Below Echo, in sec. 16, T. 4 N., R. 28 E.	Sec.-ft. 16.5
Sept. 30, 1905	do	do	do	18.1
Sept. 28, 1905	do	do	Foster's, 4 miles below Echo.	19
Oct. 2, 1905	do	do	do	32.6
Oct. 5, 1905	do	do	do	18.5
Oct. 10, 1905	do	do	do	43
Oct. 18, 1905	do	do	do	57.6
Oct. 24, 1905	do	do	do	50.1
Oct. 26, 1905	do	do	do	59.7
Oct. 31, 1905	do	do	do	68.5
Nov. 11, 1905	do	do	do	40
Dec. 4, 1905	do	do	do	227
Dec. 22, 1905	do	do	do	413
Dec. 28, 1905	do	do	do	291
Jan. 5, 1906	do	do	do	219
Jan. 13, 1906	do	do	do	420
Jan. 17, 1906	do	do	do	429
Jan. 29, 1906	do	do	do	1,090
Feb. 9, 1906	do	do	do	423
Feb. 17, 1906	do	do	do	284
Mar. 2, 1906	do	do	do	1,140
Aug. 28, 1907	do	do	One-half mile above Umatilla.	.6
Feb. 1, 1906	Meacham Creek	Umatilla River	One-half mile east of Bingham Springs.	189
Aug. 24, 1907	do	do	500 feet above mouth.	10
Mar. 10, 1904	Wild Horse Creek	do	Near Pendleton	290
Nov. 16, 1905	do	do	do . . . . .	.46
Dec. 23, 1905	do	do	do	1.7
Feb. 26, 1906	do	do	do	22
Aug. 23, 1908	McKay Creek	do	Powell's ranch	1
Sept. —, 1905	do	do	Pendleton	Dry.
Nov. 16, 1905	do	do	do	4.1
Dec. 23, 1905	do	do	do	87
Aug. 30, 1907	do	do	One-eighth mile above mouth.	.9
Nov. 5, 1905	Birch Creek	do	Pendleton	3.4
Dec. 23, 1905	do	do	do	24.2
May 7, 1906	Minnehaha Spring	do	Near Hermiston	2.6
Sept. 27, 1905	Cold Springs	do	do	1.6
Oct. 6, 1905	do	do	do	1.5
Oct. 2, 1905	Gillette Springs	do	Near Echo	2.0
Aug. 25, 1907	Ditch ^a	do	2½ miles above Pendleton	2.0
June 27, 1907	Oliver's ditch ^a	do	Below Pendleton	2.1
Aug. 23, 1907	do	do	do	6.6
Do	Deleture's ditch ^a	do	2 miles below Pendleton . . . . .	.34
Do	Crowner's ditch ^a	do	3 miles below Pendleton	1.8
May 9, 1907	J. E. Smith's ditch ^a	do	Barnhart	5.6
June 24, 1907	do	do	do	8.5
Aug. 31, 1907	do	do	do . . . . .	.7
May 4, 1907	Furnish ditch ^a	do	Above Echo	13
June 24, 1907	do	do	do	12
Aug. 29, 1907	Dillon ditch ^a	do	Below Echo . . . . .	.8
May 7, 1907	Hamilton & Brown ditch ^a	do	One-half mile above Umatilla.	1.2
Dec. 20, 1905	Bowman ditch ^a	do	do . . . . .	.31

John Day River basin.

July 11, 1907	John Day River	Columbia River	Margaret or Thompson Springs	61
Aug. 11, 1908	do	do	Prairie City	50
July 11, 1907	do	do	do	111
June 10, 1905	do	do	John Day City	269
July 9, 1907	do	do	do	178
July 8, 1907	do	do	7 miles above Dayville	226
July 7, 1907	do	do	5 miles below Dayville	292
July 6, 1907	do	do	Spray	1,170
July 12, 1907	Faps Creek	John Day River	Sec. 26, T. 13 S., R. 34 E.	14
July 11, 1907	Strawberry Creek	do	Sec. 12, T. 13 S., R. 33 E.	30
Do	Indian Creek	do	Sec. 18, T. 13 S., R. 33 E.	32
July 9, 1907	Flume to electric light plant. ^b	do	John Day City	12
June 10, 1905	Canyon Creek	John Day River	Canyon City	49.4
July 2, 1906	do	do	do	50

^a Diverts from Umatilla River.

^b Diverts from John Day River.

Miscellaneous stream measurements in Oregon—Continued.

John Day River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 11, 1908	Canyon Creek.....	John Day River.....	Canyon City.....	<i>Sec.-ft.</i> 3
Mar. 9, 1909	do.....	do.....	do.....	38
July 9, 1907	do.....	do.....	One-half mile above John Day City.	46
July 7, 1907	South Fork of John Day River.	do.....	1 mile above Dayville.....	56
Nov. 22, 1908	Dayville ditch <i>a</i>	do.....	Dayville.....	.9
July 18, 1909	do.....	do.....	do.....	1.8
July 12, 1907	Middle Fork of John Day River.	John Day River.....	Austin.....	5
July 17, 1907	do.....	do.....	Sec. 34, T 9 S., R 32 E.....	58
July 18, 1907	do.....	do.....	Ritter.....	90
Do.....	North Fork of John Day River.	do.....	Monument.....	516
July 13, 1907	Granite Creek.....	North Fork of John Day River.	Granite.....	14

Deschutes River basin.

July 23, 1904	Big Marsh Creek.....	Crescent Creek.....	Royce's ranch.....	86
May 26, 1905	do.....	do.....	do.....	80.4
June 27, 1905	do.....	do.....	do.....	45.8
Aug. 3, 1905	do.....	do.....	do.....	15.4
May 28, 1905	Crescent Creek.....	East Fork.....	Black Rock Ford.....	197
June 27, 1905	do.....	do.....	do.....	154
Aug. 6, 1904	do.....	do.....	One-half mile below Big Marsh Creek.	219
Sept. 29, 1908	do.....	do.....	Deschutes Light & Power Co.'s proposed dam, sec. 6, T. 24 S., R. 9 E.	69
Do.....	East Fork Deschutes River.....	Deschutes River.....	Below Crescent Creek.....	106
Mar. 4, 1905	do.....	Columbia River.....	B. West's ranch near Lava.....	2,080
Nov. 17, 1905	do.....	do.....	do.....	1,460
Dec. 10, 1905	do.....	do.....	do.....	1,380
Oct. 12, 1897	do.....	do.....	Near Lava.....	1,780
Oct. 28, 1905	do.....	do.....	SW. $\frac{1}{4}$ SW. $\frac{1}{4}$ sec. 31, T. 19 S., R. 11 E.	1,500
Oct. 10, 1897	do.....	do.....	Tetherow's bridge.....	1,720
Aug. 23, 1908	do.....	do.....	4 miles below Tetherow.....	1,400
Jan. 10, 1906	do.....	do.....	Sec. 36, T. 14 S., R. 12 E.....	1,350
Oct. 13, 1906	do.....	do.....	do.....	1,230
Aug. 26, 1908	do.....	do.....	Above mouth of Metolius River.	^b 1,600
Oct. 8, 1897	do.....	do.....	Warm Springs Ferry.....	4,450
Oct. 18, 1906	do.....	do.....	do.....	4,780
July 22, 1904	Crescent Creek.....	East Fork.....	Outlet of Crescent Lake.....	195
Aug. 1, 1904	do.....	do.....	do.....	166
Aug. 3, 1905	do.....	do.....	do.....	85.8
Oct. 1, 1908	do.....	do.....	do.....	50
July 23, 1904	do.....	do.....	do.....	192
July 21, 1904	East Fork.....	Deschutes River.....	Near Crescent.....	97
Aug. 21, 1904	do.....	do.....	do.....	69
Apr. 26, 1905	do.....	do.....	One-half mile below gaging station at Crescent.	68.4
Apr. 29, 1905	do.....	do.....	do.....	65.7
June 25, 1905	do.....	do.....	do.....	50
Do.....	do.....	do.....	do.....	44
Sept. 16, 1904	do.....	do.....	Near Rosland.....	246
Oct. 12, 1897	do.....	do.....	Near Lava.....	174
Mar. 8, 1905	Paulina Creek.....	do.....	Near Rosland.....	12.1
May 24, 1905	do.....	do.....	do.....	8
June 24, 1905	do.....	do.....	do.....	3.8
May 24, 1905	Findley's ditch <i>c</i>	do.....	do.....	3.9
Sept. 14, 1904	Deschutes River.....	Columbia River.....	Below Crane Prairie, sec. 8, T. 21 S., R. 8 E.	566
Oct. 25, 1908	do.....	do.....	Crane Prairie.....	213
July 28, 1904	Odell Creek.....	Deschutes River.....	Odell Lake outlet.....	128
May 28, 1905	do.....	do.....	do.....	119
June 26, 1905	do.....	do.....	do.....	90.8
Aug. 3, 1905	do.....	do.....	do.....	42.6
Oct. 1, 1908	do.....	do.....	do.....	37
Sept. 12, 1904	Davis Creek.....	do.....	One-half mile above mouth.....	289
Apr. 13, 1907	Spring River.....	Deschutes River.....	West's ranch near Lava.....	299

a Diverts from South Fork of John Day River.*b* Estimated.*c* Diverts from Deschutes River.

Miscellaneous stream measurements in Oregon—Continued.

Deschutes River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Mar. 26, 1908	Spring River	Deschutes River	West's ranch near Lava	<i>Sec.-ft.</i> 271
Apr. 23, 1909	do.	do.	do.	228
June 10, 1906	Swalley canal ^a		Intake flume, Bend	13
June 20, 1906	do.	Deschutes River	Below intake flume, Bend	6.5
Do.	do.	do.	5 miles below head, Bend	21
June 13, 1908	do.	do.	Bend	1
Aug. 27, 1908	Anderson ditch ^a		Tumalo Bridge, Bend	120
Feb. 8, 1905	Tumalo Creek	Deschutes River	Bend	117
Mar. 6, 1905	do.	do.	do.	134
June 21, 1905	do.	do.	do.	10.6
Aug. 10, 1905	do.	do.	do.	97
Nov. 28, 1905	do.	do.	do.	70
Dec. 6, 1905	do.	do.	do.	78
Aug. 27, 1908	do.	do.	Above all diversions	.5
Sept. 27, 1908	do.	do.	Below all diversions	14
June 24, 1908	Wimer & Jensen canal ^b		Tumalo, just below division box	12
Do.	do.		2 miles below division box	8.1
May 5, 1907	Wimer canal ^b		Laidlaw, below waste gate	13
Sept. 27, 1908	do.		2½ miles below intake	21
June 24, 1908	do.		6 miles below intake	44
Sept. 27, 1908	Columbia Southern canal ^b		2½ miles below intake	39
May 5, 1907	do.		Laidlaw, 3 miles below head-works	34
May 6, 1907	do.		7 miles below headworks	64
June 16, 1908	do.		7½ miles below intake	68
Aug. 1, 1909	do.		1 mile below regular station	68
Do.	do.		do.	64
Do.	do.		At second wasteway	52
Do.	do.		At crossing Bend—Sisters road	.5
Sept. 27, 1908	Wasteway of Columbia Southern canal.			
Dec. 4, 1905	Squaw Creek	Deschutes River	Sisters, above diversions	49
Dec. 5, 1905	do.	do.	do.	50
Apr. 12, 1907	do.	do.	Sisters	46
Aug. 23, 1908	do.	do.	Sisters road crossing	10
Mar. 31, 1908	Three Creeks	Squaw Creek	Gist	4.0
June 26, 1908	do.	do.	do.	13
June 13, 1906	Pole Creek	do.	Sisters	6.2
Apr. 11, 1907	Squaw Creek ditch ^c		do.	28
June 8, 1906	McAllister ditch ^c		do.	6.0
June 15, 1906	do.		do.	6.6
Mar. 30, 1908	do.		do.	4.6
June 25, 1908	do.		do.	22
Aug. 18, 1908	Crooked River	Deschutes River	Below junction of North and South forks	25
Aug. 23, 1908	do.	do.	Trail crossing	7
Apr. 15, 1906	do.	do.	Sec. 5, T. 17 S., R. 17 E.	628
Oct. 9, 1897	do.	do.	Prineville	23
Aug. 11, 1905	do.	do.	do.	9.4
Nov. 10, 1905	do.	do.	do.	51
Aug. 19, 1908	do.	do.	do.	5
Apr. 18, 1905	do.	do.	Forest, now Oneil	757
May 19, 1905	do.	do.	do.	270
June 10, 1905	do.	do.	do.	54
Dec. 3, 1905	do.	do.	do.	79
Jan. 9, 1906	do.	do.	do.	75
Apr. 16, 1906	do.	do.	do.	3,940
May 16, 1906	do.	do.	do.	326
June 17, 1906	do.	do.	do.	773
Oct. 14, 1906	do.	do.	do.	84
Apr. 16, 1905	Ochoco Creek	Crooked River	Prineville	52.2
May 18, 1905	do.	do.	do.	50
Dec. 3, 1905	do.	do.	do.	4.2
Jan. 6, 1906	do.	do.	do.	4.6
Apr. 16, 1906	do.	do.	do.	286
May 17, 1906	do.	do.	do.	35
June 7, 1906	do.	do.	do.	148
Aug. 20, 1908	do.	do.	do.	2
Oct. 9, 1897	Irrigation ditch ^d		do.	4
June 9, 1909	Pringle ditch ^d		do.	13.2
Do.	Stearns ditch ^d		do.	2.2
July 9, 1910	do. ^a		do.	10
May 18, 1905	Carmichael ditch ^d		do.	34.7
June 19, 1905	do. ^d		do.	15.7

^a Diverts from Deschutes River.
^b Diverts from Tumalo Creek.

^c Diverts from Squaw Creek.
^d Diverts from Crooked River.

Miscellaneous stream measurements in Oregon—Continued.

Deschutes River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 11, 1905	Carmichael ditch <i>a</i> . . .	.....	Prineville	<i>Sec.-ft.</i> 7.1
Mar. 5, 1905	Deschutes Irrigation & Power Co.'s flume, <i>b</i>	.....	Bend	25.5
Apr. 18, 1906	.....do. <i>b</i> . . . . .	.....	.....do.	83
Aug. 24, 1908	Metolius River	Deschutes River	600 feet below head	100
Do.	do.	do.	Below junction with Jack Creek	540
Aug. 25, 1908	do.	do.	Sec. 25, T. 11 S., R. 11 E.	1,480
Aug. 26, 1908	do.	do.	Mouth	c 1,800
Oct. 17, 1906	do.	do.	do.	c 2,800
Apr. 14, 1909	Lake Creek	Metolius River	Sisters	59
Apr. 15, 1909	Jack Creek	do.	do.	50
Do.	Canyon Creek	do.	do.	85
Do.	Eagle Creek	do.	do.	12
Oct. 8, 1897	Shitike Creek	Deschutes River	Warm Springs Agency	46
Oct. 15, 1908	do.	do.	do.	61
Oct. 7, 1897	Warm Springs River	do.	do.	284
Oct. 19, 1906	do.	do.	do.	260
Aug. 18, 1908	Beaver Creek	Warm Springs River	Paulina	5
Oct. 6, 1897	White River	Deschutes River	Tygh	192
Oct. 20, 1906	do.	do.	do.	165
Oct. 6, 1897	Tygh Creek	White River	do.	24

Eightmile Creek basin.

Sept. 10, 1906	Eightmile Creek	Columbia River	The Dalles	c 7
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Sandy River basin.

Oct. 12, 1905	Sandy River	Columbia River	Salmon post office	1,400
Aug. 31, 1906	do.	do.	do.	397
July 18, 1907	do.	do.	Sandy bridge	890
Apr. 26, 1906	do.	do.	3½ miles southeast of Troutdale	3,050
Sept. 22, 1907	do.	do.	do.	749
Sept. 1, 1906	do.	do.	Troutdale	475
Sept. 30, 1906	do.	do.	do.	688
Sept. 27, 1906	Zigzag River	Sandy River	NE. ¼ sec. 17, T. 3 S., R. 7 E.	44
July 27, 1908	do.	do.	Near Welches	147
Sept. 27, 1906	Still Creek	Zigzag River	SW. ¼ sec. 13, T. 3 S., R. 7 E.	53
Sept. 27, 1908	do.	do.	Near Welches	62
Aug. 18, 1910	Salmon River	Sandy River	Salmon Meadows dam site, sec. 13, T. 4 S., R. 8½ E.	26.7
Aug. 31, 1906	do.	do.	Salmon post office	120
Aug. 6, 1907	do.	do.	do.	159
Sept. 12, 1907	do.	do.	do.	126
July 24, 1908	do.	do.	do.	222
June 30, 1906	Bull Run pipe <i>d</i>	do.	Headworks, near Bull Run	38
Sept. 1, 1906	do. <i>d</i>	do.	do.	38
July 18, 1908	do. <i>d</i>	do.	do.	40

Willamette River basin.

Oct. 10, 1904	Willamette River	Columbia River	Bridge, at Eugene	1,370
Feb. 8, 1907	do.	do.	Morrison Street, Portland	243,000
Oct. 6, 1910	Big Fork of Fall Creek	Middle Fork of Wil- lamette River	Fall Creek	97
Sept. 23, 1908	Mohawk River	McKenzie River	Marcola	41
Aug. 16, 1906	do.	do.	Sec. 9, T. 17 S., R. 2 W	37
Aug. 8, 1910	do.	do.	McKinzie Bridge	36
Oct. 10, 1910	Lost Creek	do.	do.	201
Aug. 8, 1910	Horse Creek	do.	do.	285
Oct. 11, 1910	do.	do.	do.	319
Dec. 18, 1910	do.	do.	do.	526
Sept. 15, 1908	Long Tom River	Willamette River	2 miles above Monroe	22
Aug. 18, 1906	do.	do.	Sec. 10, T. 16 S., R. 5 W	22
Aug. 25, 1906	Marys River	do.	Sec. 11, T. 12 S., R. 6 W	18
Sept. 14, 1908	do.	do.	2 miles below Philomath	20

a Diverts from Crooked River.*b* Diverts from Deschutes River.*c* Estimated.*d* Diverts from Bull Run River.

Miscellaneous stream measurements in Oregon—Continued.

Willamette River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 16, 1908	Woods Creek.....	Willamette River.....	Philomath, near mouth.....	<i>Sec.-ft.</i> 6
Do.....	Muddy River (South Fork of Marys River).	do.....	do.....	8.6
Sept. 16, 1908	do.....	do.....	4 miles below Philomath.....	12
Aug. 16, 1907	North Fork of Marys River.	Marys River.....	Philomath, near mouth.....	11
Sept. 14, 1908	Oak Creek.....	do.....	Corvallis, near mouth.....	a 2
Sept. 18, 1908	Muddy Creek.....	Willamette River.....	1 mile west of Shedd's.....	a 2
Aug. 8, 1910	Callapooya River.....	do.....	Shedd.....	28
Aug. 23, 1906	do.....	do.....	Sec. 19, T. 12 S., R. 3 W.....	64.
Sept. 18, 1908	do.....	do.....	3 miles south of Tangent.....	33.
Sept. 17, 1908	Slaughter House Creek	Callapooya River.....	Albany, near mouth.....	a 5
Do.....	Fisher Creek.....	do.....	do.....	a .5
Sept. 18, 1908	Oak Creek.....	do.....	do.....	0
Nov. 2, 1904	Santiam River.....	Willamette River.....	Scio Ferry, near Marion.....	726
Aug. 22, 1906	North Fork of Santiam River.	Santiam River.....	Mill above Detroit.....	469
Sept. 6, 1906	do.....	do.....	Above mouth of Marion Fork..	96
July 27, 1907	do.....	do.....	One-fourth mile above Marion Fork.	165
Sept. 5, 1906	do.....	do.....	Above Breitenbush River.....	433
Sept. 4, 1906	do.....	do.....	Below Breitenbush River.....	564
Aug. 21, 1906	North Fork of North Fork.	North Fork of Santiam River.	One-half mile above Mehama.	54
Sept. 7, 1906	Roaring Creek.....	do.....	T. 11 S., R. 7 E.....	65
Sept. 6, 1906	Marion Fork of Santiam River.	do.....	Sec. 13, T. 11 S., R. 7 E.....	157
Sept. 7, 1906	do.....	do.....	200 feet below outlet of Lake Marion.	77
July 27, 1907	do.....	do.....	Fish Lake trail crossing.....	207
Sept. 6, 1906	Minto Creek.....	do.....	Sec. 10, T. 11 S., R. 7 E.....	10.4
July 27, 1907	do.....	do.....	Minto trail crossing.....	18
Sept. 6, 1906	Permelia Creek.....	do.....	Sec. 33, T. 10 S., R. 7 E.....	80
Oct. 8, 1910	do.....	do.....	Detroit.....	81
Do.....	Whitewater Creek.....	do.....	do.....	41.8
Sept. 6, 1906	do.....	do.....	SW 1/4 sec. 21, T. 10 S., R. 7 E.	65
Sept. 5, 1906	Boulder Creek.....	do.....	Detroit.....	a 5
July 26, 1907	do.....	do.....	do.....	a 10
Sept. 4, 1906	Breitenbush River.....	do.....	do.....	184
July 24, 1907	do.....	do.....	Detroit, 1,000 feet above mouth	222
July 26, 1907	Woodpecker Creek.....	do.....	Detroit, near mouth.....	a 2
Oct. 7, 1910	Otter Creek.....	do.....	Detroit.....	2.5
Do.....	Whisky Creek.....	do.....	do.....	7
Oct. 10, 1910	Tumble Creek.....	do.....	do.....	3
Aug. 24, 1906	Thomas Fork of Santiam River.	Santiam River.....	Sec. 13, T. 10 S., R. 1 W.....	28
Do.....	South Fork of Santiam River.	do.....	Sanderson bridge, sec. 4, T. 11 S., R. 2 W.	51
Sept. 3, 1906	do.....	do.....	Foster.....	131
Do.....	do.....	do.....	Withcombe place.....	82
Aug. 3, 1910	Canyon Creek.....	South Fork of Santiam River.	Cascadia.....	13.2
Sept. 3, 1906	Middle Fork of Santiam River.	do.....	Foster.....	66
Sept. 4, 1906	do.....	do.....	Withcombe place.....	82
Aug. 24, 1906	Crabtree Creek.....	do.....	Sec. 27, T. 10 S., R. 2 W.....	55
Oct. 13, 1910	Mill race.....	Santiam River.....	Jefferson.....	55.4
Sept. 10, 1908	Rickreal River.....	Willamette River.....	Dallas.....	a 3
Aug. 3, 1910	do.....	do.....	do.....	3
Sept. 11, 1908	do.....	do.....	Below Muddy River.....	10
Sept. 10, 1908	Dallas Mill canal ^b	do.....	Dallas.....	6.5
Sept. 8, 1908	North Fork of Yamhill River.	Yamhill River.....	La Fayette, 5 miles above mouth.	20
Dec. 14, 1905	South Fork of Yamhill River.	do.....	Sheridan.....	583
Oct. 7, 1908	do.....	do.....	Whiteson.....	45
July 30, 1908	Mill waste.....	South Fork of Yamhill River.	Sheridan.....	11
July 16, 1904	Molalla River.....	Willamette River.....	Near Canby.....	247
July 15, 1904	Silver Creek.....	Molalla River.....	Silverton.....	28
Aug. 7, 1904	do.....	do.....	do.....	11
Sept. 30, 1908	do.....	do.....	One-fourth mile above Silverton.	10
July 15, 1904	Abiqua Creek.....	do.....	Silverton.....	82
June 26, 1907	Tualatin River.....	Willamette River.....	Forest Grove.....	94
Sept. 25, 1907	do.....	do.....	Willamette, 3 miles above mouth.	135

^a Estimated.

^b Diverts from Rickreal River.

Miscellaneous stream measurements in Oregon—Continued.

Willamette River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
June 26, 1907	Gales Creek.....	Tualatin River.....	Forest Grove.....	<i>Sec.-ft.</i> 49
June 23, 1907	Dairy Creek.....	do.....	Greeneville.....	19
Oct. 18, 1907	Clackamas River.....	Willamette River.....	Gladstone.....	686
Oct. 8, 1907	do.....	do.....	Cazadero, between dam and power house.	230
July 21, 1910	Three Lynx Creek.....	Clackamas River.....	Mouth, sec. 21, T. 5 S., R. 6 E.	14.9
Aug. 2, 1910	do.....	do.....	do.....	13.6
Sept. 3, 1910	do.....	do.....	do.....	13.7
Aug. 2, 1910	Pacific Railway, Light & Power Co.'s power canal. ^a	do.....	Cazadero, flume above forebay.	610
Do.....	Wasteway.....	do.....	Cazadero, below penstocks.....	50
Aug. 1, 1910	Eagle Creek.....	Clackamas River.....	Sec. 10, T. 3 S., R. 4 E.....	34

Big Creek basin.

Oct. 3, 1908	Big Creek.....	Columbia River.....	Sec. 14, T. 7 N., R. 7 W.....	2.8
Do.....	do.....	do.....	2 miles southeast of Knappa.....	32
Oct. 2, 1908	Yellowstone Creek.....	Big Creek.....	Near mouth.....	3.2

Nehalem River basin.

Apr. 18, 1906	Nehalem River.....	Pacific Ocean.....	Fishhawk post office.....	386
Apr. 19, 1906	do.....	do.....	do.....	364
May 21, 1906	do.....	do.....	do.....	310
Aug. 1, 1906	do.....	do.....	do.....	102

Siuslaw River basin.

Aug. 13, 1906	Siuslaw River.....	Pacific Ocean.....	Below Walton Creek, sec. 16, T. 18 S., R. 8 W.	131
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Umpqua River basin.

Sept. 9, 1910	North Fork of South Umpqua River.	South Umpqua River.	Tiller.....	14.6
Nov. 10, 1910	do.....	do.....	do.....	141
Sept. 9, 1910	Bear Creek.....	do.....	do.....	14.2
Sept. 6, 1910	Little River.....	North Umpqua River.	Peel.....	7.8
Nov. 4, 1910	do.....	do.....	do.....	11
Oct. 25, 1910	Rock Creek.....	do.....	France.....	.9

Rogue River basin.

Aug. 6, 1906	Rogue River.....	Pacific Ocean.....	Prospect below dam.....	445
Aug. 24, 1910	do.....	do.....	Payton bridge.....	1,090
Do.....	do.....	do.....	Trail, above Trail Creek.....	1,210
July 30, 1904	do.....	do.....	Grants Pass.....	2,250
Nov. 14, 1908	Rogue River ^b Electric Co.'s canal.	do.....	Gold Ray near Tolo.....	601
Aug. 6, 1906	Condor Water & Power Co.'s canal. ^b	do.....	Prospect, 200 feet below dam..	74
Sept. 19, 1908	Mill Creek.....	North Fork of Rogue River.	Prospect.....	63
July 16, 1907	Big Butte Creek.....	Rogue River.....	5 miles below Butte Falls.....	222
Sept. 14, 1907	do.....	do.....	Near Derby.....	182
Oct. 30, 1907	do.....	do.....	do.....	218
Sept. 12, 1908	do.....	do.....	do.....	257
Aug. 5, 1906	do.....	do.....	Sec. 14, T. 34 S., R. 1 E.....	184
Aug. 7, 1906	Elk Creek.....	do.....	Sec. 21, T. 23 S., R. 1 W.....	9.1
Do.....	Trail Creek.....	do.....	Mouth.....	.0

^a Diverts from Clackamas River.^b Diverts from Rogue River.

Miscellaneous stream measurements in Oregon—Continued.

Rogue River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 20, 1910	Trail Creek	Rogue River	Trail	Sec.-ft. 0.0
Aug. 5, 1906	Little Butte Creek	do	Eagle Point	48
Sept. 22, 1910	South Fork of Little Butte Creek	Little Butte Creek	8 miles above Lake Creek	17.1
Nov. 16, 1908	Antelope Creek	do	Mouth, near Eagle Point	a 1.5
Aug. 5, 1906	do	do	Eagle Point	.0
July 10, 1907	Bear Creek	Rogue River	Ashland	16
Do	Neil Creek	Bear Creek	do	a 2
Do	Emigrant Creek	do	Mouth, Ashland	a 3
Do	Ashland Creek	do	Ashland, above diversions	16
Sept. 10, 1907	do	do	do	9.3
Feb. 12, 1908	do	do	do	12
May 11, 1908	do	do	do	26
Sept. 10, 1908	do	do	do	1.8
Aug. 17, 1910	Lake Fork of Ashland Creek	Ashland Creek	Above Ashland City intake	3
Do	do	do	Below Ashland City intake	a 1
July 11, 1907	Wagner Creek	Bear Creek	Talent, above diversions	4.2
Sept. 10, 1907	do	do	do	2.4
Nov. 2, 1907	do	do	do	3.8
May 12, 1908	do	do	Below diversions	7.1
Sept. 10, 1908	do	do	do	.5
Aug. 8, 1906	Applegate River	Rogue River	Ruch	100
Dec. 2, 1910	Little Applegate River	Applegate River	do	55.4

Klamath River basin.

Oct. 24, 1903	Klamath River	Pacific Ocean	Klamathon	2,000
July 1, 1907	do	do	Words Bridge, secs. 28-29, T. 48 N., R. 4 W., Cal.	4,000
Aug. 26, 1910	do	do	Martins Ferry, sec. 5, T. 9 N., R. 4 E.	2,350
June 19, 1905	Canal, McCormick mill race	do	Near Keno	64
Aug. 31, 1905	do	do	do	53
July 3, 1907	Jenny Creek	Klamath River	Grieve's ranch, sec. 22 or 27, T. 40 S., R. 4 E.	26
May 26, 1904	Wood River	Upper Klamath Lake	Fort Klamath	450
Aug. 22, 1905	do	do	do	266
Nov. 14, 1905	do	do	do	259
Dec. 10, 1905	do	do	do	274
Aug. 30, 1906	do	do	do	257
Aug. 6, 1907	do	do	do	295
Aug. 24, 1907	do	do	do	391
Sept. 16, 1907	do	do	do	338
Oct. 6, 1907	do	do	do	330
Mar. 3, 1908	do	do	do	318
Apr. 28, 1908	do	do	do	330
May 16, 1908	do	do	do	314
July 16, 1908	do	do	do	357
Sept. 26, 1908	do	do	do	279
Oct. 18, 1908	do	do	do	306
Oct. 2, 1909	do	do	do	292
Aug. 10, 1910	do	do	do	339
May 27, 1905	do	do	4 miles below Fort Klamath	458
Aug. 30, 1906	do	do	do	462
Aug. 7, 1907	Anna Creek	Wood River	Sec. 16, T. 33 S., R. 7 E.	62
May 15, 1908	do	do	do	62
Sept. 20, 1908	do	do	4 miles below Arants	45
Do	Anna Creek Spring	Anna Creek	Arants	2.7
Aug. 10, 1910	Cream Creek	Upper Klamath Lake	Near Sevenmile Creek	12.3
Aug. 31, 1906	Fort Creek	Wood River	2 miles southeast of Fort Klamath	115
Aug. 6, 1907	do	do	Sec. 27, T. 33 S., R. 6 E.	94
Apr. 28, 1908	do	do	2 miles southeast of Fort Klamath	115
July 16, 1908	do	do	do	95
Sept. 26, 1908	do	do	do	94
Oct. 18, 1908	do	do	do	95
Oct. 2, 1909	do	do	do	85
Aug. 11, 1910	do	do	do	120
May 27, 1905	Crooked River	do	1½ miles from Klamath Agency	46
Aug. 31, 1906	do	do	do	59

a Estimated.

Miscellaneous stream measurements in Oregon—Continued.

Klamath River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 7, 1907	Crooked River.....	Wood River.....	1½ miles from Klamath Agency.	<i>Sec.-ft.</i> 41
Apr. 28, 1908	.....do.....	.....do.....	.....do.....	52
May 15, 1908	.....do.....	.....do.....	.....do.....	52
July 16, 1908	.....do.....	.....do.....	.....do.....	47
Sept. 25, 1908	.....do.....	.....do.....	.....do.....	52
Oct. 17, 1908	.....do.....	.....do.....	.....do.....	55
Oct. 2, 1909	.....do.....	.....do.....	Above mouth of Tecumseh Creek.	45
Do.....	.....do.....	.....do.....	Below mouth of Tecumseh Creek.	80
Nov. 8, 1909	.....do.....	.....do.....	.....do.....	83
Aug. 10, 1910	.....do.....	.....do.....	.....do.....	110
Aug. 31, 1906	Spring Creek.....	Crooked River.....	1 mile from Klamath Agency.	27
Aug. 7, 1907	Tecumseh Creek.....	.....do.....	½ mile north of Klamath Agency.	20
Apr. 28, 1908	.....do.....	.....do.....	.....do.....	23
May 15, 1908	.....do.....	.....do.....	.....do.....	25
July 16, 1908	.....do.....	.....do.....	.....do.....	28
Sept. 25, 1908	.....do.....	.....do.....	.....do.....	29
Oct. 17, 1908	.....do.....	.....do.....	.....do.....	30
Oct. 2, 1909	.....do.....	.....do.....	Klamath Agency.....	32
Aug. 7, 1907	Beetles Rest Springs..	Tecumseh Creek.....	½ mile north of Klamath Agency.	25
Mar. 23, 1908	.....do.....	.....do.....	.....do.....	26
Apr. 27, 1908	.....do.....	.....do.....	.....do.....	25
Oct. 1, 1909	.....do.....	.....do.....	.....do.....	24
May 23, 1905	Sevenmile Creek.....	Upper Klamath Lake.	On road between Fort Klamath and Pelican Bay.	102
Sept. 1, 1906	.....do.....	.....do.....	.....do.....	83
Aug. 6, 1907	.....do.....	.....do.....	.....do.....	94
Oct. 19, 1908	.....do.....	.....do.....	.....do.....	57
Oct. 3, 1909	.....do.....	.....do.....	.....do.....	83
Aug. 10, 1910	.....do.....	.....do.....	.....do.....	82
May 25, 1905	Crane Creek.....	Sevenmile Creek.....	.....do.....	10.7
Aug. 6, 1907	.....do.....	.....do.....	.....do.....	11
Oct. 3, 1909	Unnamed Creek.....	.....do.....	.....do.....	9.7
May 25, 1905	Threemile Creek.....	Upper Klamath Lake.	.....do.....	6.2
Aug. 5, 1907	.....do.....	.....do.....	.....do.....	<i>a</i> 2
May 25, 1905	Cherry Creek.....	.....do.....	.....do.....	32
Sept. 1, 1906	.....do.....	.....do.....	.....do.....	9.4
Aug. 5, 1907	.....do.....	.....do.....	.....do.....	19
Oct. 3, 1909	.....do.....	.....do.....	.....do.....	5.8
Aug. 10, 1910	.....do.....	.....do.....	.....do.....	10
Aug. 3, 1907	Jones Creek.....	.....do.....	.....do.....	7.7
Oct. 3, 1909	.....do.....	.....do.....	.....do.....	1.9
Sept. 24, 1910	.....do.....	.....do.....	.....do.....	2.5
May 23, 1905	Moss Creek.....	.....do.....	On road from Klamath Falls to Pelican Bay.	2.5
Aug. 3, 1907	.....do.....	.....do.....	.....do.....	<i>a</i> 1
Oct. 4, 1909	.....do.....	.....do.....	.....do.....	6.1
May 23, 1905	Rock Creek.....	.....do.....	Near Aspin Lake.....	9.6
May 24, 1905	.....do.....	Crystal Creek.....	Crystal, Oreg.....	5.9
Sept. 3, 1906	.....do.....	Upper Klamath Lake.	7 miles below Odessa.....	12.8
Aug. 3, 1907	.....do.....	.....do.....	Sec. 9, T. 37 S., R. 7 E.	6.8
Aug. 11, 1910	.....do.....	.....do.....	5 miles southeast of Odessa, Oreg.	13
Sept. 24, 1910	.....do.....	.....do.....	Pelican Bay.....	7.3
May 24, 1905	Fourmile Creek.....	.....do.....	At road crossing between Klamath Falls and Pelican Bay.	53
May 15, 1909	.....do.....	.....do.....	Fourmile Lake.....	40
June 18, 1909	.....do.....	.....do.....	.....do.....	63
Aug. 14, 1909	.....do.....	.....do.....	.....do.....	2
May 20, 1910	.....do.....	.....do.....	.....do.....	60
June 17, 1910	.....do.....	.....do.....	.....do.....	5
Aug. 4, 1907	.....do.....	.....do.....	Sec. 4, T. 36 S., R. 5 E.	2.3
May 24, 1905	Varney Creek.....	Fourmile Creek.....	.....do.....	9.1
May 8, 1910	Barclay Springs.....	Upper Klamath Lake.	.....do.....	1.7
May 10, 1910	Cream Creek.....	.....do.....	.....do.....	12.3
Dec. 8, 1904	Williamson River.....	.....do.....	Rockyford below Klamath Marsh.	80.3
May 25, 1904	.....do.....	.....do.....	Above junction with Sprague River.	2,090
Nov. 14, 1905	.....do.....	.....do.....	.....do.....	625
Aug. 7, 1907	.....do.....	.....do.....	.....do.....	513
Oct. 7, 1907	.....do.....	.....do.....	.....do.....	507
Oct. 20, 1908	.....do.....	.....do.....	.....do.....	692
May 27, 1905	.....do.....	.....do.....	Below junction with Sprague River.	1,371

a Estimated.

Miscellaneous stream measurements in Oregon—Continued.

Klamath River basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Aug. 22, 1905	Williamson River....	Upper Klamath Lake.	Below junction with Sprague River.	<i>Sec.-ft.</i> 858
Aug. 29, 1906	.....do.....	.....do.....	.....do.....	880
Apr. 29, 1908	.....do.....	.....do.....	.....do.....	2,000
Aug. 8, 1907	.....do.....	.....do.....	4 miles above mouth	985
Oct. 5, 1907	.....do.....	.....do.....	.....do.....	960
Dec. 7, 1904	Deep Creek	Williamson River	1 mile above mouth	5.1
Aug. 13, 1905	Spring Creek	.....do.....	200 feet above mouth	362
Sept. 27, 1908	.....do.....	.....do.....	Strattons Camp	473
Oct. 1, 1909	.....do.....	.....do.....	Klamath Agency	500
Apr. 21, 1910	Miller Creek	.....do.....	Fish Lake	9.9
Sept. —, 1910	.....do.....	.....do.....	.....do.....	3.3
May 21, 1904	Sprague River	.....do.....	10 miles above Yainax	2,080
June 12, 1904	.....do.....	.....do.....	.....do.....	1,080
May 22, 1904	.....do.....	.....do.....	5 miles below Yainax	3,920
Feb. 22, 1905	.....do.....	.....do.....	.....do.....	589
Oct. 7, 1907	.....do.....	.....do.....	.....do.....	290
Oct. 21, 1908	.....do.....	.....do.....	.....do.....	315
Dec. 2, 1904	Sycan River	.....do.....	Above Sycan Marsh.	8.1
Dec. 3, 1904	Dirty Creek	Sycan Marsh.	.....do.....	1.0
Mar. 15, 1905	.....do.....	.....do.....	.....do.....	1.4
Apr. 10, 1905	.....do.....	.....do.....	.....do.....	1.3
May 2, 1905	.....do.....	.....do.....	.....do.....	1.4
Dec. 3, 1904	Coyote Creek	.....do.....	.....do.....	3.0
Mar. 15, 1905	.....do.....	.....do.....	.....do.....	4.2
Apr. 10, 1905	.....do.....	.....do.....	.....do.....	8.2
May 2, 1905	.....do.....	.....do.....	.....do.....	5.9
June 12, 1905	.....do.....	.....do.....	.....do.....	1.7
July 31, 1905	.....do.....	.....do.....	.....do.....	.6
Dec. 3, 1904	Long Creek	.....do.....	.....do.....	16.8
Mar. 15, 1905	.....do.....	.....do.....	.....do.....	33.6
Apr. 10, 1905	.....do.....	.....do.....	.....do.....	54.6
May 1, 1905	.....do.....	.....do.....	.....do.....	68.1
June 12, 1905	.....do.....	.....do.....	.....do.....	58.6
July 31, 1905	.....do.....	.....do.....	.....do.....	18.6
June 8, 1904	Ankeny canal <i>a</i>	.....do.....	Klamath Falls	32
Aug. 15, 1904	.....do.....	.....do.....	.....do.....	48
.....do.....	.....do.....	.....do.....	7 miles below intake	37
.....do.....	.....do.....	.....do.....	Klamath Falls	40
Aug. 27, 1904	.....do.....	.....do.....	.....do.....	43
.....do.....	.....do.....	.....do.....	.....do.....	29
.....do.....	.....do.....	.....do.....	7 miles below intake	33
.....do.....	Ankeny lateral <i>a</i>	.....do.....	Klamath Falls	4.8
June 29, 1905	Ankeny canal <i>a</i>	.....do.....	500 feet above power company's diversion.	57
.....do.....	.....do.....	.....do.....	.....do.....	54
May 11, 1905	.....do.....	.....do.....	.....do.....	63
June 29, 1905	.....do.....	.....do.....	.....do.....	58
Apr. 23, 1905	.....do.....	.....do.....	200 feet below diversion	8.7
May 2, 1905	.....do.....	.....do.....	.....do.....	29
May 11, 1905	.....do.....	.....do.....	.....do.....	35
Mar. 25, 1905	Moore's power canal <i>a</i>	.....do.....	$\frac{3}{4}$ mile below head	103
.....do.....	.....do.....	.....do.....	200 feet above penstock	75
June 31, 1905	.....do.....	.....do.....	.....do.....	59
.....do.....	.....do.....	.....do.....	.....do.....	53
Nov. 11, 1908	.....do.....	.....do.....	.....do.....	65
Nov. 21, 1908	.....do.....	.....do.....	.....do.....	65
Feb. 5, 1909	.....do.....	.....do.....	.....do.....	58
Mar. 25, 1905	Moore's irrigation canal <i>a</i>	.....do.....	300 feet below head	129
.....do.....	.....do.....	.....do.....	.....do.....	10.9
June 21, 1905	Main Klamath project canal <i>b</i>	.....do.....	Klamath Falls	66
Oct. 25, 1909	Klamath Falls Light & Power Co.'s intake <i>c</i>	.....do.....	.....do.....	335
.....do.....	.....do.....	.....do.....	.....do.....	332
Oct. 2, 1904	Adams ditch <i>c</i>	.....do.....	Near Merrill	26
May 14, 1905	.....do.....	.....do.....	.....do.....	46
May 21, 1905	.....do.....	.....do.....	.....do.....	53
June 15, 1905	.....do.....	.....do.....	.....do.....	51
July 22, 1905	.....do.....	.....do.....	.....do.....	51
Aug. 24, 1905	.....do.....	.....do.....	.....do.....	37
Aug. 25, 1905	.....do.....	.....do.....	.....do.....	29
.....do.....	.....do.....	.....do.....	.....do.....	41
Sept. 15, 1909	Klamath Straits.....	Lower Klamath Lake.	Near Ady	63
Oct. 2, 1909	.....do.....	.....do.....	.....do.....	359

a Diverts from Link River.*c* Diverts from Lower Klamath Lake.*b* Diverts from Upper Klamath Lake.

Miscellaneous stream measurements in Oregon—Continued.

Tule Lake basin.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
July 19, 1905	Boards ditch <i>a</i>		Near Olene, Ore.	<i>Sec.-ft.</i> 0.3
May 31, 1905	Browne's west canal <i>a</i>		Near Bonanza, Ore.	8.6
June 2, 1905	Griffith canal <i>a</i>		Near Olene, Ore.	1.8
June 13, 1905	do.		do.	1.9
June 25, 1905	do.		do.	1.3
June 23, 1905	Horton ditch <i>a</i>		Poe Valley, Ore.	4.4
May 19, 1904	Lost River	Tule Lake	Langells Valley, Ore.	716
Nov. 22, 1909	do.	do.	Upper end of Langells Valley, Oreg.	656
Oct. 22, 1909	do.	do.	4 miles west of Bonanza, Ore.	98
Mar. 17, 1908	do.	do.	10 miles above Merrill, Ore.	1,300
May 13, 1907	Lost River, East Fork	Lost River	Sec. 3, T. 48 N., R. 7 E., Cal.	2
May 20, 1904	Miller Creek	do.	Near Lorella, Ore.	326
May 16, 1908	Olene Springs	do.	Near Olene, Ore.	2.9
June 13, 1905	Phillip's wheel canal <i>a</i>		9 miles above Merrill, Ore.	1.2
July 25, 1905	do.		do.	.2
Apr. 13, 1908	Tule Lake outlet <i>b</i>		Near Scorpion Point, Cal.	14.4
Apr. 23, 1908	do.		do.	14.4
May 3, 1908	do.		do.	16.4
May 12, 1908	do.		do.	14.2
June 10, 1908	do.		do.	11.9
June 26, 1908	do.		do.	12.8
July 10, 1908	do.		do.	14.4
Dec. 7, 1908	do.		do.	33
Dec. 23, 1908	do.		do.	29
Mar. 16, 1909	do.		Scorpion Point, Cal.	30
Sept. 17, 1909	do.		do.	30
June 2, 1905	Swingle flume canal <i>c</i>		Near Lorella, Ore.	.2

Sacramento River (Goose Lake) basin.

May 8, 1909	Thomas Creek	Goose Lake	Near Lakeview	90
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Great Basin.

May 11, 1909	Twentymile Creek	Warner Lake	Warner Lake	90
June 16, 1904	Chewaucan River	Abert Lake	Paisley	776
July 14, 1904	do.	do.	do.	173
Sept. 14, 1904	do.	do.	do.	56.2
Nov. 20, 1904	do.	do.	One-half mile above Paisley	70
Oct. 13, 1908	do.	do.	do.	25
Nov. 18, 1908	do.	do.	ZX ranch	54
Nov. 19, 1908	do.	do.	Lake Abert, county bridge	55
May 15, 1909	Schoolhouse Creek	Chewaucan River	Paisley	5.4
July 14, 1904	Conn's irrigation ditch ^d		Near Paisley	4.5
Nov. 20, 1904	do.		do.	2.7
May 11, 1905	do.		do.	6.7
July 4, 1905	do.		do.	14.6
July 14, 1904	Brattain ditch		do.	26
Oct. 13, 1908	Dra nage canal ^d Chewaucan Land and Cattle Co.		do.	15
July 17, 1904	Upper Spring	Ana River	Summer Lake	16
Dec. 3, 1904	Silver Creek	Silver Lake	Thompson Valley	11
Oct. 3, 1905	do.	do.	do.	11
Oct. 8, 1908	do.	do.	Silver Lake	7
Oct. 10, 1908	do.	do.	do.	7
Oct. 11, 1908	Bridge Creek	Silver Creek	Owsley's ranch	3
Nov. 24, 1904	do.	do.	Silver Lake	1.21
Nov. 23, 1904	do.	do.	do.	2.42
Apr. 28, 1909	do.	do.	do.	20
Oct. 11, 1908	Bear (Buck) Creek	Silver Lake	Hay's ranch	5
Nov. 24, 1904	do.	do.	Silver Lake	9.5
Nov. 28, 1904	do.	do.	do.	14
Oct. 3, 1904	Emigrant Creek	Silvies River	Ford near mouth	15
Aug. 28, 1907	do.	do.	"P" ranch	45
Aug. 21, 1907	do.	do.	do.	60
Sept. 18, 1908	do.	do.	do.	42

^a Diverts from Lost River.^b This is an artificial outlet constructed by the United States Reclamation Service.^c Diverts from Miller Creek.^d Diverts from Chewaucan River.

Miscellaneous stream measurements in Oregon—Continued.

Great Basin—Continued.

Date.	Stream.	Tributary to—	Locality.	Dis-charge.
Jan. 26, 1909	Donner und Blitzen River.	Malheur Lake.....	Narrows.....	<i>Sec.-ft.</i> 285
Mar. 25, 1909	.....do.....	.....do.....	.....do.....	91
Aug. 13, 1908	.....do.....	.....do.....	Mouth.....	7
Aug. 27, 1907	Krumbo Creek.....	Blitzen River.....	Near mouth.....	5.5
Aug. 30, 1907	Bridge Creek.....	.....do.....	3 miles northeast of "P" ranch.	12
Aug. 24, 1907	Keiger Creek.....	Blitzen River.....	Diamond.....	9
Aug. 27, 1907	McCoy Creek.....	Keiger Creek.....	2 miles above Diamond ranch..	3.5
Oct. 16, 1904	Silver Creek.....	Harney Lake.....	Dam site.....	4.6
Oct. 30, 1904	.....do.....	.....do.....	.....do.....	5.0
Aug. 17, 1908	.....do.....	.....do.....	Cecil's ranch.....	.5
July 21, 1905	.....do.....	.....do.....	Riley.....	1.5
Sept. 23, 1904	.....do.....	.....do.....	Outlet of Silver Lake.....	24
Sept. 9, 1907	Trout Creek.....	Alvord Lake.....	Mouth of canyon.....	1.3
Sept. 10, 1907	Willow Creek.....	Small lake east of Alvord Lake.	5 miles southwest of White House ranch.	1.4
Sept. 13, 1907	Alvord Creek.....	.....do.....	Drains east side of Steens Mountains.	2.0
Aug. 26, 1907	Smyth Creek.....	Bartow Lake.....	3 miles above mouth.....	1.2
Sept. 1, 1907	Home Creek.....	.....do.....	Southwest side of Steens Mountains.	3.0
Aug. 31, 1907	Roaring Springs.....do.....do.....	5.0
Sept. 2, 1907	Threemile Creek.....do.....do.....	4.5
Sept. 6, 1907	Skull Creek.....do.....do.....	5.0

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